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COVER STORY: FISHES OF THE PEACE-ATHABASCA DELTA

by John Kristensen
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For the past six years (1975-1980) LGL Limited has been involved with fisheries research in the Peace-Atahabasca Delta (Figure 1), both within and outside the boundary of Wood Buffalo National Park. Research has focused on determining the effects of water control structures on fish movement and spawning success (Kristensen *et al.* 1976; Kristensen 1978; Kristensen and Summers 1978) and determining the effects of a commercial fishery on local fish populations (Summers 1978; Kristensen 1979). This research has resulted in the gathering of voluminous amounts of data concerning the abundances, distributions, movements and life histories of 18 species of fish represented by 9 families and 15 genera. A total of 22 species (10 families and 17 genera) are reported to occur in the Delta when information of Paetz (1973) and a Fort Chipewyan fisherman is included (Table 1).

During our studies, over 60,000 fish were captured in gill nets, and over 1,000,000 were captured in trawl nets. (I should point out that the majority of the fish captured were released alive; relatively few were sacrificed for purposes of determining several life history characteristics.) Sampling was conducted in all of the waterbodies shown in Figure 1. The approximate order of abundance of fish captured in gill nets for the entire study area was as follows: goldeye[1], northern pike, lake whitefish, walleye, longnose sucker, flathead chub, burbot, white sucker, tullibee, round whitefish, Arctic grayling, and Dolly Varden. The approximate order of abundance of fish captured in trawl nets for the entire study area was as follows: emerald shiner, trout-perch, ninespine stickleback, spottail shiner, longnose sucker, goldeye, walleye, northern pike, flathead chub, burbot, tullibee, lake whitefish, lake chub, and brook stickleback. It is difficult to determine the true relative abundances and distributions of fishes because they must, in most cases, be captured in order to obtain this information. Catch rates of the various fish species are dependent upon, and are biased by, several parameters including season, sampling technique, fish behaviour, and fish size.

Population estimates for the most abundant larger species in the Delta (excluding Richardson Lake) were derived in 1976 and 1977, on the basis of mark-recapture information. Over 27,000 fish (species combined) were tagged with coded dart tags and released during these two years. Approximately 1,200,000 goldeye, 17,000 lake whitefish, 16,000 northern pike and 10,000 walleye were estimated to have been present in the delta between May and October 1976; and approximately 500,000 goldeye, 24,000 lake whitefish, 87,000 northern pike, 3,000 walleye, and 7,000 longnose sucker were estimated to have been present between May and August 1977.

[1] Editor's note: scientific names are listed in Table 1. Although A.N. policy is to capitalize English names, we deviate from this policy in this paper to conform to current practice among North American ichthyologists. - M.K.M.

Brief accounts of the species reported to occur in the Peace-Athabasca Delta (as they are listed in Table 1) follow. For detailed descriptions of these species refer to Paetz and Nelson (1970) or Scott and Crossman (1973).

Arctic grayling, usually found in cold and relatively clear waterbodies, have been reported infrequently in the Peace-Athabasca Delta, where waterbodies are relatively warm and extremely turbid. Domestic fishermen of Fort Chipewyan occasionally catch this species in their gill nets. Only two Arctic grayling were captured during our studies, both from the Revillon Coupé in spring 1980. The species most probably does not spawn in the Delta.

Lake whitefish were captured in all lakes and rivers sampled. This species was particularly abundant in Lake Athabasca, the Chenal des Quatre Fourches, Revillon Coupé and Rivière des Roches. They were relatively uncommon in the Claire-Mamawi lakes system, perhaps due to the warm water temperatures of these shallow lakes in summer. The species tends to inhabit cool-water waterbodies. Lake whitefish in the Delta probably spawn in Lake Athabasca and Flett Lake. Although we have captured a few young-of-the-year lake whitefish (4) in the Claire-Mamawi lakes system, the species probably does not spawn there because eggs would likely not survive successfully over winter since the lakes normally freeze to the bottom. Lake whitefish that inhabit the Delta during major portions of the year may also spawn in the Athabasca River upstream of Fort McMurray, where extremely high concentrations of spawning lake whitefish have been found. The species is intensively fished domestically in the Delta for consumption by both humans and sled dogs. Lake whitefish that were tagged in the Peace-Athabasca Delta have been recaptured as far south as Fort McMurray on the Athabasca River.

Cisco, or tullibee, close relatives of lake whitefish, are not particularly abundant in the Delta. Only 2 and 6 larger fish were captured in gill nets in the Rivière des Roches, and Revillon Coupé, respectively, in 1977; and only 7, 17 and 49 young-of-the-year fish were captured in trawl nets in the Rivière des Roches, Chenal des Quatre Fourches and Revillon Coupé, respectively, in 1977. All of these fish were captured relatively close to the Peace River, suggesting that tullibee spawn in the region. Although Bishop (1975) did not report the species upstream in the Peace River, it may occur in this river and possibly in the Slave River, at least in the vicinity of the Peace-Athabasca Delta.

The shortjaw cisco, very similar to the tullibee, was not captured during our studies. Although Paetz (1973) reported it for the Peace-Athabasca Delta region, it is known in Alberta only from Barrow Lake, located immediately northeast of the Delta (Paetz and Nelson 1970).

Two round whitefish were captured at Little Rapids on the Rivière des Roches in May 1977, and were the first recorded for Alberta (Kristensen and Foy 1980). The species occurs in the Saskatchewan portion of Lake Athabasca and also in the Slave River, Northwest Territories. We speculated that the two round whitefish captured in the Peace-Athabasca Delta had travelled upstream in the Slave River into Alberta from the Northwest Territories.

Lake trout are occasionally captured in the Delta by local fishermen, particularly in the western portion of Lake Athabasca. The species is found in greater numbers east of the Delta in the deeper, more clear waters of Lake Athabasca. Lake trout are commercially fished in the Saskatchewan portion of this lake. Research concerning lake trout spawning periods and distribution in eastern Lake Athabasca has been conducted by Johnson (1973).

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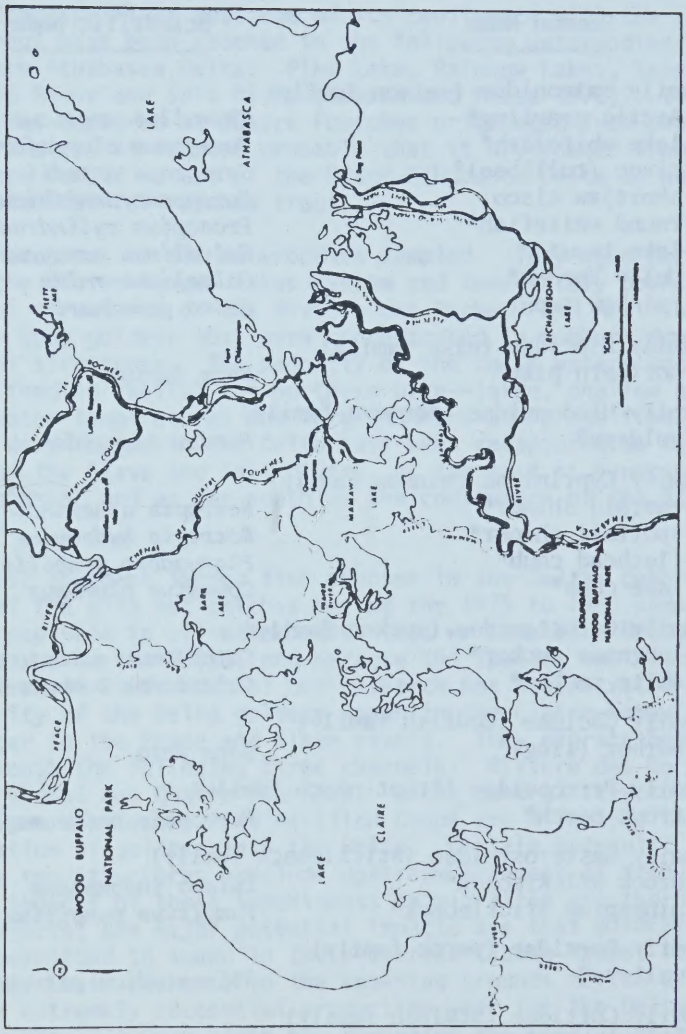

Figure 1. The Peace-Athabasca Delta Study Area.

TABLE 1. Fishes Reported to Occur in the Peace-Athabasca Delta. (Asterisks denote species captured by LGL Ltd. The relative abundance of fishes captured is denoted as follows: abundant=more than 500 fish; common=50-499 fish; rare= less than 50 fish.)

Common Name	Scientific Name	Occurrence
Family Salmonidae (salmon family)		
Arctic grayling*	*Thymallus arcticus*	rare
lake whitefish*	*Coregonus clupeaformis*	abundant
cisco (tullibee)*	*Coregonus artedii*	common
shortjaw cisco	*Coregonus zenithicus*	rare
round whitefish*	*Prosopium cylindraceum*	rare
lake trout	*Salvelinus namaycush*	rare
Dolly Varden*	*Salvelinus malma*	rare
rainbow trout	*Salmo gairdneri*	rare
Family Esocidae (pike family)		
northern pike*	*Esox lucius*	abundant
Family Hiodontidae (mooneye family)		
goldeye*	*Hiodon alosoides*	abundant
Family Cyprinidae (minnow family)		
emerald shiner*	*Notropis atherinoides*	abundant
spottail shiner*	*Notropis hudsonius*	abundant
flathead chub*	*Platygobio gracilis*	abundant
lake chub*	*Couesius plumbeus*	rare
Family Catostomidae (sucker family)		
longnose sucker*	*Catostomus catostomus*	abundant
white sucker*	*Catostomus commersoni*	common
Family Gadidae (codfish family)		
burbot (ling)*	*Lota lota*	common
Family Percopsidae (trout-perch family)		
trout-perch*	*Percopsis omiscomaycus*	abundant
Family Gasterosteidae (stickleback family)		
brook stickleback*	*Culaea inconstans*	rare
ninespine stickleback*	*Pungitius pungitius*	abundant
Family Percidae (perch family)		
walleye*	*Stizostedion vitreum*	abundant
Family Cottidae (sculpin family)		
slimy sculpin	*Cottus cognatus*	rare

We captured one Dolly Varden in a fyke net at Little Rapids in 1976. This record extends the northern range of the species in Alberta. The previous northernmost record of Dolly Varden in Alberta was one captured in a small tributary of the Peace River about 65 km north of the town of Peace River (Bishop 1973). Dolly Varden normally prefer cool clear waterbodies.

One rainbow trout was captured at Quatre Fourches in June 1976 by a domestic fisherman, Archie Simpson. The species has not previously been reported for the Alberta Peace drainage but has occurred in the Athabasca drainage (in the Athabasca River upstream of its confluence with the Pembina River). Rainbow trout have been stocked in the following waterbodies in the vicinity of the Peace-Athabasca Delta: Pine Lake, Rainbow Lakes, Seven Mile Lake, Little Buffalo River and Salt River (Nelson and Paetz 1972). If the rainbow trout that was captured at Quatre Fourches originated from one of these stocked waterbodies, it is most probable that it originated from the Salt River. The warm turbid waters of the Peace-Athabasca Delta do not provide favourable habitat for rainbow trout.

Northern pike occurred in all waterbodies sampled. They were particularly abundant in the Claire-Mamawi lakes system and immediately downstream of the water control structures on the Rivière des Roches and Revillon Coupe. Pike preyed heavily upon goldeye that were concentrated in numbers downstream of these two control structures. The majority of the Delta waters provide ideal spawning and feeding habitat for northern pike--large, shallow and weedy areas, warm water temperatures and large numbers of forage fish. Northern pike that were tagged in the Delta have been recaptured as far north as the confluence of the Slave and Salt rivers, as far east as Burntwood Island on Lake Athabasca, and as far south as the confluence of the Athabasca and Embarras rivers.

Goldeye, the most abundant larger fish species in the Delta, comprised approximately 65% of the gill net catches during the 1975 to 1980 sampling period. They were captured in all waterbodies that we sampled. Because of this species' abundance in the Delta, and because the species was intensively commercially fished until 1966, much of our research has concentrated on goldeye. The majority of the Delta goldeye spawn in the Claire-Mamawi lakes system and overwinter in the Peace and Slave rivers. They migrate between these two areas through the following three channels: Rivière des Roches Revillon Coupé and Chenal des Quatre Fourches. Water control structures (weirs) on the Rivière des Roches and Revillon Coupé are affecting the annual spring migration of goldeye into the Delta. Certain hydraulic conditions at these two structures preclude upstream movement of fish. Potential negative impacts of these impediments to migration are thoroughly discussed in our reports; the major potential impacts are that goldeye either may not be permitted to spawn in the preferred Claire-Mamawi lakes system, or, at least, their entrance to the spawning grounds may be delayed. Because 1971 was an extremely successful production year for the Delta goldeye population, the 1971 year class has dominated the population since that year. Mark-recapture data have revealed some interesting aspects of goldeye movement. Goldeye tagged in the Peace-Athabasca Delta have been recaptured as far north as the Slave River Delta, as far west as Garden Creek on the Peace River, as far south as between Athabasca and Calling River on the Athabasca River, and as far east as Burntwood Island on Lake Athabasca. Goldeye in the Claire-Mamawi lakes system and in the Slave, Peace and Athabasca rivers appear to be members of the same general population. For more detailed information concerning the natural history of goldeye, refer to Kristensen (1977).

Emerald shiners were by far the most abundant forage fish in most of the waterbodies sampled, particulary Lake Claire. On several occasions, over 1,000 fish were captured during a two-minute trawl. They appeared to prefer areas with a soft clay substrate and dominated by various species of rush. Northern pike and walleye prey intensively upon this species. Emerald shiners spawn in the Delta.

Spottail shiners were much less abundant than emerald shiners but were found in most waterbodies sampled during our studies. They were particularly abundant during August in rivers within the study area, especially along shorelines dominated by horsetails. They spawn in the Delta. Nelson and Paetz (1972) found both emerald and spottail shiners to have a spotty distribution in northeastern Wood Buffalo National Park.

Flathead chub were captured in moderate numbers in almost all of the waterbodies within the Delta, particularly in rivers. This species is the largest minnow of the region; in fact the largest Canadian record of flathead chub is from the Peace-Athabasca Delta (Kristensen 1980). Spawning occurs in the Delta; particularly high numbers of young-of-the-year fish were captured in the Birch River.

Only 4 and 2 lake chub were captured in the Birch River and Lake Claire, respectively, in 1977. They probably do not spawn in the study area. This species was common in only a few watercourses in northeastern Wood Buffalo National Park (Nelson and Paetz 1972), but was very abundant in the Peace River upstream from the town of Peace River (Bishop 1975).

Longnose suckers occurred in most of the waterbodies sampled. Recently hatched young-of-the-year fish were particularly abundant in Lake Athabasca, the Birch River, the Chenal des Quatre Fourches and Jackfish Creek (which drains Richardson Lake), indicating that they spawn in the region.

Relatively few (less than 100) white suckers were captured during our studies. They appear to be evenly distributed throughout the Delta waterbodies and most probably spawn in the region (although no young-of-the-year fish were captured).

Burbot were captured in most waterbodies sampled but were most abundant in the Chenal des Quatre Fourches and Rivière des Roches. They spawn in the Delta; young-of-the-year fish were captured in Lake Athabasca and the Chenal des Quatre Fourches.

Trout-perch were captured in most of the waterbodies within the Delta, exceptions being Lake Athabasca, Baril Lake and the Baril River. This small forage fish appeared particularly abundant in the Claire-Mamawi lakes system over a sandy substrate dominated by several species of rush. The species appeared particularly active at night, since the largest catches were obtained during night-time trawls. Trout-perch spawn in the Delta, particularly in the shallow lakes.

Only one brook stickleback was captured in the Baril River in 1977. The species was reported as rare upstream in the Peace drainage (Bishop 1975) but as abundant in numerous waterbodies in northeastern Wood Buffalo National Park (Nelson and Paetz 1972).

Ninespine stickleback were abundant in all waterbodies sampled except the Birch River, Baril River and Baril Lake, where none was captured. They

appeared to prefer areas with a soft clay substrate and dense submerged aquatic vegetation. The species appeared relatively abundant in northeastern Wood Buffalo National Park (Nelson and Paetz 1972) but was not reported further upstream in the Peace River (Bishop 1975).

Walleye in the Delta have received significant attention because the species is intensively fished commercially during late spring or early summer. The species occurred in most waterbodies sampled during our studies. Walleye are particularly abundant in Richardson Lake during spring, since this waterbody is the single most important spawning area in the Delta for the species; however, spawning also takes place in the Claire-Mamawi lakes system, along the northern shoreline of Lake Athabasca in the vicinity of Fort Chipewyan, and in Blanche Lake, located due west of Richardson Lake. In late June and July, young-of-the-year walleye migrate in very large schools from Richardson Lake into Lake Athabasca. Many of the walleye that spawn in the Peace-Athabasca Delta are captured by commercial fishermen in both the Alberta and the Saskatchewan portions of Lake Athabasca. Walleye that were tagged in the Delta have been recaptured as far upstream in the Birch River as the Modere Creek confluence, as far south as Fort MacKay on the Athabasca River, and as far east as the Saskatchewan portion of Lake Athabasca.

Although the slimy sculpin was reported by Paetz (1973) as occurring in the Peace-Athabasca Delta, we did not capture a single specimen. The species was not reported in northeastern Wood Buffalo National Park (Nelson and Paetz 1972), but has been reported in the upper Peace River (Bishop 1975) and in Lake Athabasca (Paetz and Nelson 1970).

Additional fisheries research in the Peace-Athabasca Delta will probably result in records of other fish species that have been reported in areas near the Delta. Such species include the following: Arctic lamprey (*Lampetra japonica*), inconnu (*Stenodus leucichthys*), chum salmon (*Oncorhynchus keta*) northern redbelly dace (*Chrosomus eos*), finescale dace (*C. neogaeus*), fathead minnow (*Pimephales promelas*), longnose dace (*Rhinichthys cataractae*), pearl dace (*Semotilus margarita*), northern squawfish (*Ptychocheilus oregonensis*), redside shiner (*Richardsonius balteatus*), yellow perch (*Perca flavescens*) and spoonhead sculpin (*Cottus ricei*).

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DAY'S END[1]

---

by Arlyne Tydeman Dewar
Box 513
Rimbey, Alberta TOC 2SO

The long
warm
Sunday afternoon
is over

people
blaring radios
noisy cars
are gone . . .
stillness settles
like a balm
on woods and water

two loons
mid-lake
hesitant

[1] Editor's note: previously published in Rimbey Record.

to break the new-found
silence
utter
haunting cries

probably saying
"thank goodness!"

ERIC DALE SMITH

---

by Lloyd Lohr
Box 1414
Stettler, Alberta TOC 2LO

Following a lengthy illness, Eric Smith passed away on 7 October 1980. Born in Botha on 11 September 1923, Eric was raised on the family farm in the Zenith school district hear the hamlet of Hackett, southeast of Stettler, Alberta. After spending a few years logging in B.C. and in seismic exploration, he trained as an auto mechanic. After marrying Barbara Dye, they settled in Stettler, where Eric built his own house. He became a Master Technician in Auto Mechanics and was part owner of Superior Garage for 27 years.

Interested in community affairs, Eric was a member of Stettler Elks, was an Elder in the United Church, and took part in local sports, in later years as timekeeper at hockey games. Always interested in nature and the outdoors, he joined in with his sons in Scouting, took the Gilwell Scout training course, and was Scout Leader and District Scout Commissioner. He was an active member of the Stettler Rock Club, serving 2 terms as president. Eric, wife Barbara and daughter Karen joined the Buffalo Lake Naturalists soon after its organization and entered wholeheartedly into all activities. He served as president for 2 years, reporter for 2 years and was an elected Director for F.A.N. for a number of years, serving on several committees. During this time he learned to snowshoe, ski and canoe; and enjoyed camping out and seeing new country. With a natural aptitude for tools and learning, Eric became a skilled photographer and proficient bird bander. All through the long months of weary treatments for his crippling terminal illness, Eric stoutly maintained a cheery, optomistic outlook and continued to participate in all his interests as long as physically possible. A quiet, unassuming man, the measure of his worth was indicated by the pall bearers chosen for his funeral, his two closest neighbours, two of his fellow workmen, and one each from B.L.N. and the Rock Club. Eric is sorely missed and will be long remembered as a true citizen, a community worker, a good family man; and excellent company when attending meetings, hiking, skiing, canoeing and camping.

BAND-TAILED PIGEON SIGHTING AT STETTLER

---

by Lloyd Lohr
Box 1414
Stettler, Alberta TOC 2LO

On 24 June 1979 my son Laverne and I were approaching our farm buildings, situated on SW 30-37-20-W4, about 14 miles southwest of Stettler, Alberta, northeast of Ewing Lake. We noticed some of the resident Barn Swallows

(*Hirundo rustica*) swooping at a larger bird perched in a poplar tree in a grove sheltering the farm buildings. Curious as to what kind of a hawk it could be, we got out of our vehicle and walked closer, soon realizing that its head was too small for a bird of prey. The form was dove or pigeon like, coloured like the local feral pigeons (*Columba livia*), reddish purple on crown to brownish grey on back and lighter underneath, yellow bill, and light red ring around the eye. The bird had an uncertain manner about it as if it was in unfamiliar territory. By then two Black-billed Magpies (*Pica pica*) nesting nearby spied the stranger and joined in the harassment, causing the bird to take off and fly to a dead tree on the opposite side of the feed lot. This gave us a good view of the broad, light coloured band at the end of the rounded tail and confirmed our conjecture that this was a Band-tailed Pigeon (*Columba fasciata*). A quick trip to the house for a camera (no film), 7 x 35 binoculars and Birds of North America (Robbins *et al.*, 1965), soon confirmed our identification. We could clearly see the white strip on the back of the neck and the other proper characteristics. We left the bird quietly resting on its perch with no further sightings recorded.

Assuming their normal range was from Idaho and Nevada south we checked up in Birds of Alberta (Salt and Salt 1976) to discover that mention is made of 6 sightings in Alberta, the first one at Leduc in 1967.

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A WOLF-ELK PREDATOR-PREY INTERACTION IN JASPER NATIONAL PARK

by John L. Kansas
Canadian Wildlife Service
Jasper, Alberta

There are few recorded observations of Wolf (*Canis lupus*) predation or Elk (*Cervus elaphus*) anti-predator strategy in the literature. This note documents an unsuccessful attack by three Wolves upon four Elk in Jasper National Park, Alberta.

On the morning of 26 March 1980 an aerial ungulate survey was conducted along the lower Athabasca River from Jasper townsite to the east boundary of Jasper National Park by Kevin Van Tighem, Gary Foreman (pilot), Francais Phillips, Kathy Gibson and me. At approximately 1130 h two black Timber Wolves were seen holding an antlerless bull Elk at bay on the upper edge of a 30 foot cliff on the north shore of the Athabasca River at Jasper Lake. We circled the scene at a distance of about 300 m. The situation was viewed for approximately two minutes during which time the Elk tried to lie down twice. Each time both Wolves walked toward the Elk, forcing it to rise. The Wolves were not visibly disturbed by the presence of the helicopter. From our vantage point the Elk did not appear to be wounded, but behaved tired and listless.

At 1300 h a group of 5 observers (Wayne Brasseur, John Pitcher [JNP Interpretive Service], Michel Schuppisser, John Phillips and the writer) then drove to a point on the Yellowhead Highway 1.5 km from the terraced slopes

where the incident was first viewed from the helicopter. The following observations were made through a 20x to 45x variable spotting scope and 7 x 35 binoculars.

The Wolves and Elk were now on a grassland apron below the site of original observation. Two black Wolves, presumably the same individuals, were seen chasing three antlerless bull Elk downhill for approximately 50 m. The Elk then veered sharply along the contour towards another cliff ledge. The Wolves nipped a number of times at the upper flank of one Elk at the onset of the chase, but were soon outdistanced.

The Elk huddled closely at the very upper edge of the cliff face while the Wolves stopped about 25 m from them. After moving randomly about at this distance from the Elk for approximately 15 minutes, one Wolf bedded beneath a clump of spruce while the other slowly moved diagonally uphill away from the Elk. At this time another bull Elk, with antlers, was seen crossing the slope about 50 m above and to the west of the cornered Elk. Its movements were slow and deliberate as it made its way to the cliff's edge at a point about 25 m above the other three Elk. It then proceeded downhill along the edge to join them. One of the Wolves moved slowly uphill towards the antlered bull but made no sudden or aggressive movements.

In the meantime a third black Wolf had appeared from heavy spruce cover 100 m from the four Elk. The Wolves individually drifted away from the Elk until after 15 minutes none were in view. The three Wolves made no attempt to crowd or attack the cornered Elk even though the Elk were extremely vulnerable. Within 5 minutes of the last Wolf's departure the Elk moved uphill along the cliff and then in a direction opposite that taken by the Wolves.

At this point, two men were seen walking along the railway tracks that ran below the slope 20 m from the point at which the three Elk were cornered. Although the men, railway workers, seemed unaware of the animals above them, it appeared that their presence led to the abandoning of the area by the Wolves.

The Elk were grazing calmly along the edge of a gravel road 150 m uphill from the site of the initial chase just one hour afterwards. A group of 30 sheep were also grazing in the same vicinity.

The strategic use of precipitous terrain by Wolves to corner or secure bull Elk in Jasper National park has been documented by Van Tighem *et al.* (1980), who described a similar instance, based on interpretation of sign, only 1 km from the site of this occurrence. Child *et al.* (1978) witnessed a single wolf using mountainous terrain to hunt and kill two Dall Sheep (*Ovis dalli*) in central British Columbia.

Timber Wolves in regions of mountainous terrain at times evidently use the topography to their advantage to prey upon ungulates. Carbyn (1974) states that the proximity of rugged escape terrain is the most effective anti-predator defense mechanism for Bighorn Sheep (*Ovis canadensis*) and Mountain Goat (*Oreamnas americanus*) against Wolf predation. However, Elk, animals less well adapted to steep, rocky terrain, are apparently vulnerable to Wolf predation in this type of habitat. It is also noteworthy that in this case an obviously prolonged effort to secure prey was nullified by human interference.

Finally, the actions of the fourth Elk are difficult to understand. It may have intended to defend the antlerless bulls, but it is likely that its own safety was more in doubt alone than with the group.

This observation was made while the author was employed by the Canadian Wildlife Service and collecting data for the Biophysical Wildlife Inventory of Jasper National Park. Major funding was supplied by Parks Canada.

Thanks to Geoff Holroyd, Kevin Van Tighem and Ed Telfer of the Canadian Wildlife Service for comments on earlier drafts of this note.

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A SOLUTION FOR HOUSE SPARROW PROBLEMS

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Our bluebird box line is on Highway 2 around the International Airport. During the summer of 1980 House Sparrows (*Passer domesticus*) took over many of the bird houses we had set out for Tree Swallows (*Iridoprocne bicolor*) and Mountain Bluebirds (*Sialia currucoides*). This year we evicted 72 nests of sparrows. If we hadn't chased them away they would have killed the Tree Swallows we want to attract.

One of the club members recently reported a new anti-sparrow idea that seemed to work in the United States. A hole is cut in the roof of the bird box, and a piece of clear plastic is mounted on top. An alternative is to replace the wood roof with a plastic sheet. We decided to try it. Nine plastic roofed houses were mounted at locations where sparrows had nested previously. Of the four nests mounted in April:

- one produced 5 Tree Swallow eggs and 5 young
- one produced 7 Tree Swallow eggs and 6 young
- one contained Tree Swallow nesting material
- one had no nest

One box mounted on 11 May produced five Tree Swallow eggs and three young. All four of the boxes mounted on 21 June remained empty.

At one site, after removing the original wooden box and replacing it with one containing a plastic roof we watched a sparrow return. This female had a feather in her beak. She went part-way into the hole twice. Each time she backed out. She then dropped the feather on the ground and flew away.

Our experiences at other sites where we did not use plastic roofs have been less successful. At one location we evicted a sparrow nest with five sparrow eggs. This nest sat on top of two dead Tree Swallows, probably killed earlier by the male sparrow. Both dead birds had their heads badly pecked. At each of the next two visits we found a dead Tree Swallow. On 11 July there were three Tree Swallow eggs in a new nest. A count of all losses on my trail at the end of 1980 gave 8 dead adult Tree Swallow, females, and 5 dead young in the nest, all with their heads badly pecked, presumably by House Sparrows.

At several other sites after we had evicted the sparrows on three separate visits, Tree Swallows were able to raise young.

These results appear to indicate that the new style houses with clear plastic covered roofs may be the answer to our sparrow problem. Why not try it and report your results to me or Cam Finlay at the Nature Centre in Edmonton.

FIRST RUDDY TURNSTONE SIGHTING IN THE ROCKY MOUNTAINS OF ALBERTA

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by Geoffrey L. Holroyd
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On 14 August 1979 I observed a single Ruddy Turnstone (*Arenaria interpres*) on the east shore of Bow Lake, Banff National Park. The bird was observed for approximately one minute through binoculars at a distance of 20 feet and then flushed. The dull fall plumage and dark and white back patterns were diagnostic. Bow Lake is located 100 km north of Banff townsite at an elevation of 1940 m. A pair of Spotted Sandpipers (*Actitis macularia*) were the only other shorebirds in that section of shoreline.

Salt and Salt (1976) state that Ruddy Turnstones have "not been reported from the Rocky Mountains" (p.154). No other sightings are known for Banff and Jasper National Parks (CWS wildlife inventory reports and unpublished data), Kananaskis Provincial Park (Wiseley 1979), Kananaskis Forest Research Station (Powell *et al.* 1979) and Waterton National Park (Sharp 1973). Thus, this sighting appears to be the first record in the Alberta Rockies.

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HIGHFIELD, A "NATURAL" AREA

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All photographs by the author

INTRODUCTION

This is the study of a small urban natural or semi-natural area in the City of Calgary. The study was carried out during lunch breaks over a period of eight years, 1973 to 1980, and was prompted by the work of the Calgary Field Naturalists' Society's Natural Areas Committee. This committee has produced three publications on natural areas in Calgary.

This study and report are typical of what can and probably should be done for many small out of the way areas in Calgary or in other cities. These areas are too small to be Biotic Natural Areas (Tans 1974), Natural Reserves (Diamond 1975), or Natural Areas (Bird 1973, 1974; Gehlbach 1975) but can be important as reservoirs of native vegetation where one may find and study these plants.

The study of a small area, by one's self, with friends, or with a natural history club is a fascinating experience and a great way to learn the local plants and animals. However, errors can be made and there may be some errors in species identification in this study.

Description

The area is bounded on the north by 34th Avenue S.E., on the south by 46th Avenue S.E., on the west by a C.N.R. spur line just east of 11th Street S.E., and on the east by the C.N.R. railroad tracks. The subdivision is called Highfield.

The natural areas are parts of the eastern escarpment of a large hill or plateau. The top of this plateau was probably the bottom of ancient Lake Calgary. Melt waters from retreating glaciers must have carved the valleys to the west and south. To the north and east, the cutting flow of the Bow River has formed the Bow River valley. These valley systems link up to isolate the plateau, Highfield. Three photographs accompanying this article illustrate habitats found in the area.

History

An old Dominion Lands Office "end of steel" map shows settlement in the area. Surveys for this map were conducted by Chs. Eng. Larue and dated 8 March 1894. The area of the study is in the NE 1/4 of Sec 2, Tp 24, R1, West of the 5th.

The map shows a Thomas Fitzgerald living in the NE 1/4 of the section, encompassing my area 5 (Fig. 1). Alfred Sidney McKay lived in the SE 1/4 of the section, encompassing my areas 18, 19, and 20 and George Hamilton lived in the NW 1/4 of the section just west of the study area.

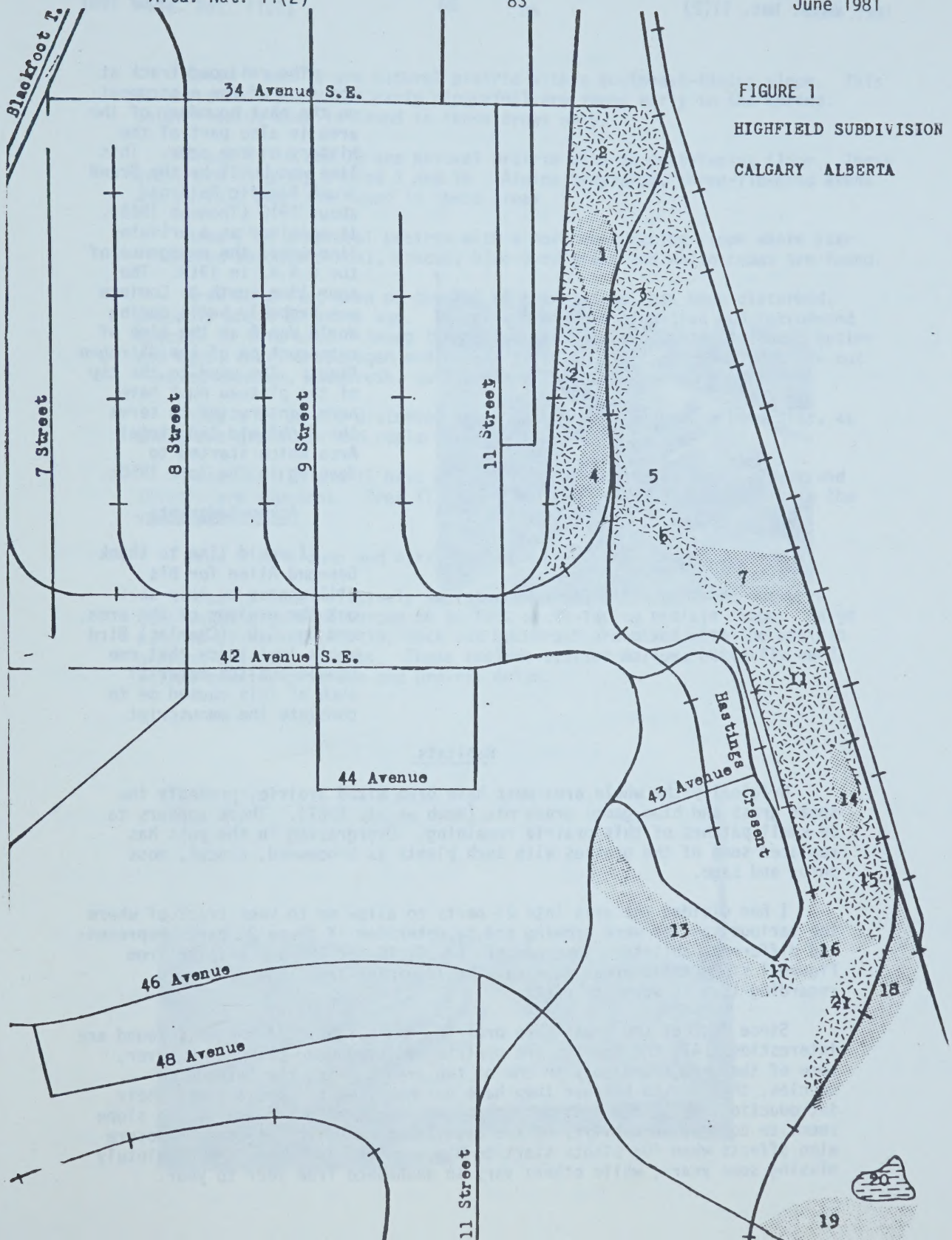


FIGURE 1

HIGHFIELD SUBDIVISION

CALGARY ALBERTA

The railroad track at the foot of the escarpment on the east boundary of the area is also part of the history of the area. This line was built by the Grand Trunk Pacific Railroad about 1910 (Thomson 1966). It remained as a private line until the emergence of the C.N.R. in 1918. The spur line south to Cominco was probably built during World War 2 at the time of construction of the Nitrogen Plant. The spur to the top of the plateau must have been constructed to serve the Highfield Industrial Area which started to develop in the late 1950s.

Acknowledgments

I would like to thank Desmond Allen for his willingness to help sort out the geology of the area, and Dr. C.D. (Charlie) Bird who's insistance that one should publish material such as this caused me to complete the manuscript.

Habitats

Originally the whole area must have been mixed prairie, probably the spear grass and blue gamma grass mix (Webb *et al.* 1967). There appears to be small patches of this prairie remaining. Overgrazing in the past has replaced some of the grasses with such plants as broomweed, crocus, moss phlox and sage.

I had divided the area into 21 parts to allow me to keep track of where the various species were growing and to determine if these 21 parts represented different habitats. Some numbers (8, 9, 10 and 12) are missing from Figure 1 since these areas were so like adjoining areas that I ceased regarding them as separate parts.

Since most of the areas were prairie, the slight differences I found are interesting. All the species are prairie or introduced plants. However, some of them are found only in one or two areas. With the introduced species, this may be because they have not had time to spread since their introduction. With the native species the exposure to the sun of the slope seems to control suitability of the area for some of the plants. Exposure also affects when the plants start to bloom. Certain plants are completely missing some years, while others vary in abundance from year to year.

Areas 1 and 16 are natural prairie with a southeast-facing slope. This is where moss phlox and early cinquefoil are found early in the spring. Later blazing star is found in these areas only.

Areas 4, 14 and 18 are natural prairie with an east-facing slope. These areas are slightly behind 1 and 16. Alpine hedysarum, three-flowered avens and buffalo bean are found in these areas.

Area 7 is a natural prairie with a northeast-facing slope where star-flowered solomon's-seal, crocus, blue-eyed grass and white camas are found.

Area 2, a flat area on the top of the plateau, has been disturbed, probably about 20 years ago. There is a mixture of native and introduced species in this area. Among the introduced plants are blue lettuce, butter and eggs, dwarf snapdragon and canada thistle. Some native plants are cut-leaved anemone, buckbrush, gaillardia and three-flowered avens.

Area 3 is an old disturbed area, which may have been a home-site, as there are green ash and poplar trees growing here.

Areas 6, 11, and 15 have been disturbed recently. Sweet-clover and thistle are abundant. Area 11 has the only patch of globe thistle in the study area.

Area 5 is a dump and earth-moving machine training ground.

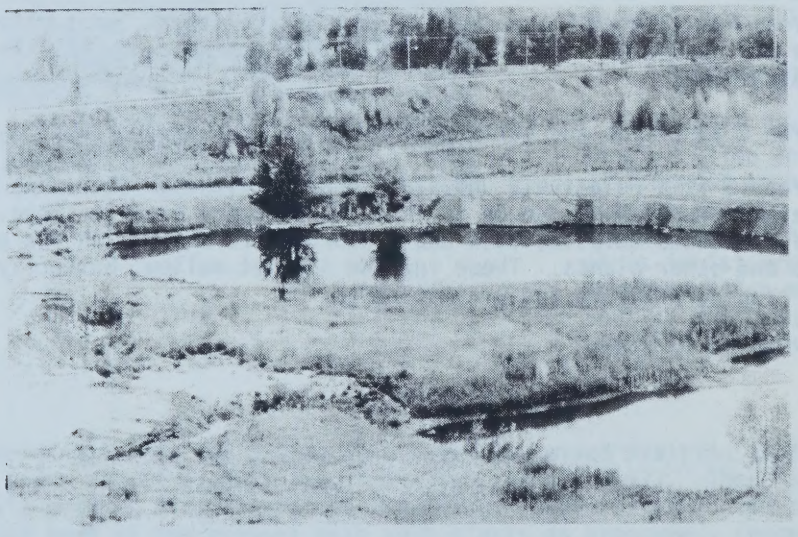
Area 13 is a relatively undisturbed area, although there has been considerable rubbish thrown on to this south-facing prairie slope. Large patches of canada thistle, dock and buckbrush are mixed with the prairie grasses and other plants. These include scarlet mallow, butterfly weed, yellow evening primrose and prairie onion.

Area 17 is disturbed, but I'm not sure by what or how long ago. This is the only place in the study area where common mullein is found.

Area 21 is a disturbed area along the tracks. There has been dumping of rubbish as well as some clay-like material along the tracks. Black henbane grows here.

Area 20 is a pond. Here are found the waterfowl (Mallards and Common Goldeneye), as well as magpies, Rock Doves and Starlings. Snow dumping is decreasing the size of the pond every year. There must be salt in the water from the melting snow dumped from the city streets. However, plants such as cattail still grow along the edges of the pond.

Area 19 is an ex-marsh. This area is now covered in and leveled as part of the snow dump. Prior to this action there were cattails, reeds, nettles and horsetail growing here.



Annotated Lists of Species

I have found and listed 52 species of plants, two species of butterflies, one grasshopper, 27 species of birds and 5 species of mammals. This is certainly not a complete list of species; just a start.

The method I used to keep track of my sightings is adapted from the forms Dr. C.D. Bird designed for our Natural Areas Committee's study. I used a notebook with the pages divided into columns with the following headings:

Species ---- Ra ---- D/♂ ----L/♀ ----B/Im ---- F/? ----

Each page or section of page provided a place for the location and date of the sightings.

Explanation of titles: RA - relative abundance
D - dormant
L - leaf
B - bloom
F - fruit
♂ - male
♀ - female
Im - immature
? - unknown

Plants encountered are listed in the following table. Dates are abbreviated in the following manner: 80 07 03 = 3 July 1980.

VASCULAR PLANTS

	Flowering			Fruiting
	First	Peak	Last	First
HORSETAILS				
Equisetum arvense - Common Horsetail Was fairly common in area 19.				
E. pratense - Meadow Horsetail Was fairly common in area 19.				
MONOCOTS				
Bouteloua gracilis - Blue Gama Grass Fairly common in prairie areas.	80 07 03	07 09	77 09 13	
Habenaria hyperborea - Northern Green Bog Orchid Rare, found once.	79 07 31			
Hierochloe oderata - Sweet Grass Fairly common in prairie areas.	79 05 28		78 06 27	
Hordeum jubatum - Foxtail Barley Fairly common in area 2.				80 07 28
Juncus balticus var. montanus - Wire Rush Fairly common near pond area 20.	80 06 17		78 07 17	
Sisyrinchium montanum - Blue-eyed Grass Fairly common, mainly in area 7.	77 05 10	06 13 06 21	74 08 27	73 06 21
Smilacina stellata - Star-flowered Solomon's-seal A major species in prairie areas.	77 05 10	05 28 07 04	77 07 04	80 06 17
Stipa comata - Spear Grass A major species in prairie areas.				80 06 26
Typha latifolia - Cattail Fairly common around pond area 20.	73 07 13			

	Flowering			Fruiting
	First	Peak	Last	First
Zygadenus elegans - White Camas	80 05 21	06 24 07 16	78 08 14	
Fairly common in prairie areas.				
DICOTS				
Achillea millefolium - Common Yarrow	79 06 11	07 03 07 17	77 10 13	74 08 27
Fairly common throughout the area.				
Actaea rubra - Baneberry	74 06 21			
Rare, found once.				
Agoseris glauca - False Dandelion	78 07 17		78 08 14	
Rare, found once.				
Amelanchier alnifolia - Saskatoon	80 05 01		79 06 05	76 05 04
Fairly common on the east slope of area 14.				
Androsace septentrionalis - Fairy Candelabra	73 03 24	03 24	74 08 22	
A few plants seen throughout the area.				
Anemone canadensis - Canada Anemone	73 06 11		73 06 23	
Rare, found once.				
A. cylindrica - Long-fruited Anemone	78 05 29		80 06 26	80 06 18
Fairly common, found mainly in areas 1, 4 and 7.				
A. multifida - Cut-leaved Anemone	77 05 10	05 14 06 14	79 06 28	77 06 06
Fairly common throughout the area.				
A. patens var. wolfgangiana - Prairie Crocus	80 04 18	04 23 05 03	79 05 23	
Fairly common throughout the prairie areas most years, a major species in 1980.				
Antennaria nitia - Small Everlasting	77 05 10		73 07 03	
Fairly common in prairie areas.				
Apocynum androsaemifolium - Spreading Dogbane	80 05 20	05 29 07 25	78 08 14	74 07 14
A major species, mainly in area 14.				
Arabis holboellii - Reflexed Rock Cress	78 05 09	05 15 05 25	78 07 04	80 05 29
Rare in 1975 and 1977, fairly common in 1980 and a major species in 1978. This plant is a host to one of the rusts, *Puccinia* spp. Early in the year, 05 02, this yellow rust is so conspicuous that one thinks the plant is in flower. In some years the rust and the host are major species, in other years the rust is absent, even though the host is fairly common.				

	Flowering			Fruiting
	First	Peak	Last	First
Arctium minus - Common Burdock A few plants in the disturbed areas 2 and 11.	77 07 27	08 01 08 11	78 10 04	80 08 07
Artemisia biennis - Biennial Sagewort A few plants seen in area 2.	80 08 07	08 07		80 09 16
A. campestris - Plains Sagewort Rare, found once.	79 08 23			
A. frigida - Pasture Sagewort A major species found throughout the area. Favours disturbed areas.	74 08 04	08 08 08 16	77 09 12	
A. ludoviciana var. ghaphalodes - Prairie Sagewort Fairly common throughout the area.	79 07 25	08 04 08 07	73 09 04	
Aster falcatus - Creeping White Prairie Aster A few plants seen.	73 08 15	08 15 09 16	74 09 16	
A. laevis - Smooth Aster A major species found throughout the area.	80 07 11	08 07 09 12	80 10 16	80 08 25
A. pansus - Tufted White Prairie Aster A major species found throughout the area.	80 07 10	07 12 09 23	78 10 05	76 09 22
Astragalus agrestis - Purple Milk Vetch A major species found throughout the area.	77 05 03	05 03 06 10	78 & 75 07 04	
A. crassicarpus - Buffalo Bean A major species found in disturbed and prairie areas mainly 11 and 14.	77 05 03	05 03 05 15	75 07 15	76 & 77 06 01
A. decumbens - Timber Milk Vetch A few plants seen one year only.	78 06 13		78 07 04	
A. flexuosus - Slender Milk Vetch A major species found mainly in area 16.	80 06 19	06 22 07 15	80 07 15	
Barbarea vulgaris - Yellow Rocket A few plants seen.	80 07 15		73 08 15	
Brassica kaber var. pinnatifida - Wild Mustard A few plants seen one year only.	79 07 24		79 08 21	
Campanula rapuncloides - Bluebell Rare, found in disturbed areas.	80 07 14		77 98 14	

	Flowering			Fruiting
	First	Peak	Last	First
Campanula rotundifolia - Bluebell	80 06 17	06 17 – 07 08	76 10 09	77 07 27
Fairly common in prairie areas.				
Castilleja septentrionalis - Common Yellow Paint-brush	76 06 09		78 07 17	
A few plants seen in areas 15 and 16.				
Cerastium arvensis - Field Chickweed	80 05 30		79 06 04	
A few plants seen in area 4.				
Chaenorrhinum minus - Dwarf Snapdragon	80 08 05		80 08 26	
A few plants seen one year only in area 2 near the tracks.				
Chamaerhodos erecta - Chamaerhodos	80 05 30	06 06 – 06 18	78 07 12	
Fairly common in area 2. This is the dominant species in one small sandy section of the area.				
Chrysopsis villosa - Golden Aster	80 06 19	07 28 – 09 16	78 10 18	
A major species found throughout the area.				
Cirsium arvensis - Canada Thistle	76 07 06	07 10 – 08 24	78 10 16	73 07 10
A major species found throughout the area, mainly in the disturbed areas.				
C. arvensis var. albiflorum	76 07 06		77 07 27	
A few plants seen.				
C. vulgare - Bull Thistle	77 08 04	08 04 – 08 24	78 10 17	77 08 24
Fairly common throughout the disturbed areas.				
Clematis tangutica - Yellow Clematis	76 06 01	06 28 – 07 17	77 09 12	80 08 11
A major species in the disturbed areas.				
Comandra pallida - Pale Comandra	80 05 15	05 21 – 05 30	79 06 18	
A major species found mainly in the prairie areas.				
Conringia orientalis - Hare's-ear Mustard	77 09 17		80 10 30	
A few plants seen in disturbed areas.				
Cornus stolonifera - Red Osier Dogwood	77 05 10	05 20 – 07 25	80 07 25	
A few plants seen along the disturbed bank of area 14.				
Descurainia sophia - Tansy Mustard	78 10 23		79 07 11	
A few plants seen in area 5.				
Diplotaxis muralis - Sand Rocket	78 05 09	06 12 – 10 10	78 10 23	
Fairly commonly found throughout the area.				

	Flowering			Fruiting
	First	Peak	Last	First
Dodecatheon sp. - Shooting Star Rare, found once.	76 05 07			
Echinops sphaerocephals - Globe Thistle Rare in 1955 to fairly common in 1980. All found fairly close together at the north end of area 11.	77 07 04	07 27 08 24	80 09 23	77 09 12
Eleagnus commutata - Wolf Willow A major species found mainly along the top of the bank in area 11.	80 05 20	05 20 05 29	78 06 29	
Epilobium angustifolium - Fireweed Fairly common in the disturbed areas along the tracks.	80 06 11	07 09 08 11	78 08 14	
Erigeron caespitosus - Tufted Fleabane Fairly common in prairie areas.	79 06 18	07 08	79 08 08	
Erucastrum gallicum - Dog mustard A major species found throughout the disturbed areas.	75 05 03	09 22 10 09	78 11 07	
Erysimum cheiranthoides - Wormseed Mustard Rare, reported once.	78 11 03			
E. inconspicuum - Small Flowered Rocket Fairly common throughout the area.	76 05 31	06 12 07 03	73 07 03	
Fragaria virginiana - Strawberry Fairly common in one section of area 4.	76 05 07	05 14 05 30	78 06 22	
Gaillardia aristata - Gaillardia A major species found throughout the area.	77 06 07	06 21 07 22	77 10 10	74 07 16
Galium boreale - Northern Bedstraw A major species found mainly in prairie areas.	80 05 28	06 13 07 17	77 09 17	
Gaura coccinea - Scarlet Butterfly-weed A major species some years, fairly common most years, found in prairie areas.	78 06 08	06 19 07 15	79 08 25	
Gentiana affinis - Prairie Gentian A few plants found one year only in the prairie of area 7.	79 08 01		79 08 06	
Geranium viscosissimum - Sticky Purple Geranium Fairly common in prairie areas.	77 05 20	05 30 07 17	76 09 28	80 07 14

	Flowering			Fruiting
	First	Peak	Last	First
Geum triflorum - Three-flowered Avens	76 04 12	05 01 05 28	79 06 18	80 05 21
A major species some years, fairly common most years in prairie areas.				
Glycyrrhiza lepidota - Wild Licorice	77 06 13	07 03 07 14	78 08 14	70 07 25
Fairly common in one small disturbed section at the south end of area 15.				
Grindelia squarrosa - Gumweed	78 07 24	08 04 09 19	78 09 28	77 09 14
A few plants found in disturbed areas.				
Gutierrezia sarothrae - Broomweed	77 06 23	07 09 08 27	77 10 10	
A major species found throughout the area.				
Hedysarum alpinum - Alpine Hedysarum	77 05 13	06 07 06 21	77 08 04	74 07 16
Fairly commonly found throughout the area.				
H. mackenzii - Mackenzie's Hedysarum	77 05 03	06 10 06 21	77 10 04	73 07 17
A major species found throughout the area.				
Helianthus laetiflorus - - Rhombic-leaved Sunflower	78 07 24	07 29 08 24	79 08 29	
A few plants seen in the disturbed areas 11 and 15.				
Hieracium canadensis - Canada Hawkweed	80 06 24		74 08 27	74 08 27
Fairly common throughout the area.				
Heuchera richardsonii - Alum-root	77 06 06	06 17 07 14	78 07 21	77 07 27
A few plants found in the prairie of area 14.				
Hyoscyamus niger - Black Henbane	77 05 25	07 05	78 08 23	
A few plants found in the disturbed area along the tracks in area 21.				
Lactuca pulchella - Common Blue Lettuce	80 06 18	07 12 07 14	79 07 25	80 07 23
Fairly common in one disturbed section of area 2.				
Lappula echinata - Blue-bur	78 06 01	06 11 09 04	78 10 17	77 08 04
A major species found throughout the area, mainly in disturbed sections.				
Lepidium densiflorum - Common Peppergrass				80 06 26
Rare, found once.				
Lesquerella arenosa - Bladder-pod	80 05 01	05 01 06 19	80 06 19	
Fairly common, found in prairie areas.				
Liatris punctata - Blazing Star	77 07 05	08 07 08 27	80 09 30	77 08 16
A major species found in the prairie of area 16.				

	Flowering			Fruiting
	First	Peak	Last	First
Liatris punctata - Blazing Star A major species found in the prairie of area 16.	77 07 05	08 07 – 08 27	80 09 30	77 08 16
Linaria vulgaris - Butter and Eggs A major species found along the tracks in areas 1, 3 and 4.	80 05 16	07 03 – 09 12	77 11 01	73 07 17
Linum lewisii - Wild Blue Flax Fairly common, found in the prairie areas.	76 05 31	06 17 – 06 18	77 09 17	80 08 11
L. rigidum - Yellow Flax A few plants found in the prairie of area 7.	77 06 08	06 08 – 07 28	79 08 23	
Lithospermum incisum - Incised Puccuum Fairly common, found throughout the area.	77 05 03	05 03 – 05 28	78 06 27	
L. ruderale - Woolly Gromwell A few plants found along the top of the bank in areas 11 and 15.	80 05 15	05 15 – 06 17	78 06 27	
Lonicera tartarica - Tartarian Honeysuckle A few plants found scattered throughout the area.	77 05 20	05 29	78 06 27	
Lygodesmia juncea - Skeleton Weed Fairly common, found in areas 15 and 16.	77 07 05	07 17 – 08 27	76 09 28	74 08 27
Matricaria maritima - Scentless Chamomile A few plants found in disturbed areas.	78 07 17		75 10 26	
Medicago falcata - Yellow Alfalfa A few plants found one year only.	80 06 19			
M. sativa - Alfalfa Fairly common, found in disturbed areas, mainly area 11.	80 05 29	07 14 – 08 22	79 09 17	
Melilotus alba - White Sweet Clover A major species found mainly in disturbed areas.	77 06 21	06 28 – 09 04	78 11 03	74 08 22
M. officinalis - Yellow Sweet Clover A major species found mainly in disturbed areas.	77 06 06	06 17 – 08 24	77 11 01	77 08 24
Mentha arvensis - Wild Mint Fairly common in area 19. This area is now filled and leveled for a snow dump.	77 07 13			

	Flowering			Fruiting
	First	Peak	Last	First
Monarda fistulosa - Wild Bergamot	80 06 19	07 04 – 07 17	77 10 15	77 10 15
Fairly common in prairie areas.				
Musineon divaricatum - Rough-seeded Musineon	75 05 02		76 05 04	
A few plants seen in the early days of the study, none found in recent years.				
Oenothera biennis - Yellow Evening Primrose	74 06 18	06 26 – 07 14	80 09 30	
A few plants found scattered throughout the area.				
Orthocarpus luteus - Owl-clover	78 07 12	07 15	79 08 27	
A few plants found in area 7.				
Oxytropis sericea var. spicata - Early Yellow Loco-weed	77 05 25			
Rare, found once.				
Paronychia sessilifora - Low Whitlow-wort	80 06 07			
Rare, found once.				
Petalostemon purpureum - - Purple Prairie Clover	77 06 22	07 03 – 07 17	78 08 23	80 07 22
Fairly common in prairie areas.				
Phlox hoodii - Moss Phlox	73 03 24	04 05 – 05 21	80 06 17	
A major species found in prairie areas.				
Plantago major - Plantain	75 07 15			
A few plants found.				
Populus spp.				
Fairly common, found scattered throughout the area. Hybrids.				
Potentilla anserina - Silverweed	77 05 09	05 29 – 06 24	79 08 21	
A major species found mainly in area 11.				
P. arguta - White Cinquefoil	77 06 23	06 23 – 06 24	78 06 27	
A few plants found in areas 14 and 16.				
P. concinna - Early Cinquefoil	79 04 30	05 01 – 05 28	74 06 10	
Fairly common in prairie areas.				
P. fruticosa - Shrubby Cinquefoil	80 05 20	06 13 – 07 17	77 09 17	74 07 16
A major species found throughout the area.				
P. gracilis - Graceful Cinquefoil	76 05 12	05 12 – 07 17	74 07 17	
Fairly common, found in areas 14 and 16.				
P. norvegica - Rough Cinquefoil	78 06 13	– 06 26	75 06 26	
A few plants found in areas 14, 15 and 16.				

	Flowering			Fruiting
	First	Peak	Last	First
Potentilla pensylvanica - Prairie Cinquefoil	77 06 21			
Rare, found once.				
Prunus virginiana - Choke Cherry	80 05 01		79 06 07	
A few plants found in areas 2 and 11.				
Ranunculus acris - Tall Buttercup	78 06 26		78 08 23	
Rare, found one year.				
Ratabida columnifera - Prairie Cone-flower	80 07 10	07 11 07 25	73 07 29	
Rare, one plant found north of the study area and one plant in area 18.				
Ribes aureum - Golden Current	78 05 26		78 06 19	
Rare, one plant found in area 11.				
R. oxyacanthoides - Gooseberry	77 05 03			
A few plants seen along the tracks in areas 11 and 15.				
Rosa sp.	80 05 30	06 13 08 11	77 09 20	73 06 21
A major species found throughout the area.				
Rumex mexicanus - Narrow-leaved Dock	76 05 31		78 06 26	
A few plants found in disturbed areas.				
Salix sp.				80 05 20
A few plants found along the tracks in area 11.				
Salsola kali var. tenuifolia - - Russian Thistle	80 07 03		80 10 08	
A major species found in disturbed areas.				
Senecio canus - Pairie Groundsel	76 05 31	06 12 07 03	80 07 17	
A major species found throughout the area.				
S. eremophilus - Cut-leaved Ragwort	79 08 23			
Rare, found once.				
S. vulgaris - Common Groundsel	80 10 18			
Reported once.				
Shepherdia canadensis - Canada Buffalo-berry	74 05 05			
Rare, found one plant in area 11.				
Silene cserei - Smooth Catchfly	74 06 21	06 21 07 09	79 08 23	
Fairly common, found along the tracks between areas 2 and 11.				
Sisymbrium altissimum - Tumbling Mustard	77 06 23	06 23 09 16	79 10 24	77 08 15
Fairly common througout the area.				

	Flowering			Fruiting
	First	Peak	Last	First
Solidago gigantea - Late Goldenrod	74 07 23	08 11	77 10 10	
Fairly common throughout the area.				
S. rigida - Stiff Goldenrod	73 08 09			
Rare, reported once.				
Sonchus uliginosus - Perennial Sow Thistle	78 07 04	07 17 09 17	78 10 17	77 09 12
A major species found throughout the area.				
Sphaeralcea coccinea - Scarlet Mallow	80 05 20	06 17 07 10	79 09 12	
A major species found in areas 16 and 18.				
Symphoricarpos albus - Snowberry	78 06 28	76 07 06		
A few plants reported.				
S. occidentalis - Buckbrush	77 06 13	07 09 08 04	79 10 09	80 08 11
A major species found throughout the area.				
Tanacetum vulgare - Tansy	78 07 19		79 09 19	
A few plants found in disturbed area 5.				
Taraxacum officinale - Common Dandelion	73 03 24	05 03 05 28	80 10 30	77 10 04
A major species found throughout the area.				
Thalictrum venulosum - Veiny Meadow Rue	79 05 29	06 17	77 06 17	74 07 16
A few plants found in area 7.				
Thermopsis rhombifolia - Golden Bean	74 04 12	05 01 05 28	80 07 11	80 05 30
A major species found throughout the area.				
Thlaspi arvense - Stinkweed	79 05 29		80 06 24	
A few plants reported				
Tragopogon dubius - Goatsbeard	80 05 28	06 26 06 28	80 10 27	73 08 13
A major species found throughout the area.				
Trifolium pratense - Red Clover	78 07 04			
Rare, reported once.				
T. repens - White Clover	80 06 19			
Rare, reported once.				
Urtica gracilis - Common Nettle	78 06 26			
Fairly common in area 19. This area now filled and leveled for a snow dump.				
Verbascum thapsus - Common Mullein	80 07 03	07 03 07 05	80 10 07	77 09 13
A few plants found in disturbed area 17.				
Vicia americana - Wild Vetch	77 06 06		77 09 17	
A few plants found.				

	Flowering			Fruiting
	First	Peak	Last	First
Vicia cracca - Tufted Vetch	78 06 26		78 08 14	
A few plants found.				
V. sparsifolia - Narrow-leaved Vetch	77 05 26	05 29 07 03	78 08 04	
Fairly common in prairie areas.				
Viola adunca - Early Blue Violet	77 05 03	05 03 05 28	79 06 17	
Fairly common in prairie of area 4.				
V. nuttallii - Yellow Prairie Violet	76 05 07			
Rare, found once.				
Zizia aptera - Heart-leaved Alexander	74 06 10			
Rare, found once.				

Annotated List of Animals

Two butterflies, 27 birds, one grasshopper and five mammals have been observed in or flying over the area. Most of the birds were seen flying over this rather small area. Two of the mammals, hare and ground squirrel, live in the area. There are many more insect species which I have not collected or identified.

Butterflies

Colia eurytheme - Alfalfa Butterfly

Rare, found once, 75 06 26.

Pieris rapae - Cabbage White

Rare, found once, 78 03 29.

Grasshoppers

Oedipodinae sp. - Band-winged Grasshopper

May be Camnula pellucida. Fairly common throughout the area.

Birds

Mallard (Anas platyrhynchos)

A few birds, found mainly on the pond area 20.

Common Goldeneye (Bucephala clangula)

A few birds, found mainly on the pond area 20.

Red-tailed Hawk (Buteo jamaicensis)

Rare, reported once flying over the area.

Swainson's Hawk (Buteo swainsoni)

A few birds reported flying (hunting?) over the area.

Marsh Hawk (Circus cyaneus)

Rare, reported once.

American Kestrel (Falco sparverius)

A few birds seen, may nest nearby, immature seen with adults.

Ring-necked Pheasant (Phasianus colchicus)

A few birds seen each year.

Gray Partridge (Perdix perdix)

Fairly common, found all year. Immature with adults found two years.

Killdeer (Charadrius vociferus)

A few birds found most years.

Ring-billed Gull (Larus delawarensis)

A few birds found flying over the area most years.

Rock Dove (Columba livia)

Fairly common along tracks below areas 11 and 15.

Common Nighthawk (Chordeiles minor)

Rare, found once.

Common Flicker (Colaptes auratus)

Rare, found once.

Downy Woodpecker (Picoides pubescens)

Rare, found once.

Eastern Kingbird (Tyrannus tyrannus)

Rare, found once.

Horned Lark (Eremophila alpestris)

Rare, found once.

Black-billed Magpie (Pica pica)

Fairly common throughout the area, found all year.

Common Crow (Corvus brachyrchynchos)

A few birds found flying over the area.

American Robin (Turdus americana)

A few birds found mainly in the spring.

Common Starling (Sturnus vulgaris)

A few birds found on the power and telephone structures.

House Sparrow (Passer domesticus)

Fairly common throughout the area.

Western Meadowlark (Sturnella neglecta)

Rare, found once.

Common Redpoll (Carduelis flammea)

Fairly common in flocks in winter feeding on weed (Sweet Clover) seeds.

Vesper Sparrow (Pooecetes gramineus)

A few birds found. Nest with four eggs found in 1973.

Dark-eyed Junco (Junco hyemalis)

Rare, found twice.

Clay-colored Sparrow (Spizella pallida)

Fairly common, may nest in the area as it is found all summer.

White-crowned Sparrow (Zonotrichia leucophrys)

Rare, found once.

Mammals

Snowshoe Hare (Lepus americanus)

Fairly common, one to three animals may be found almost any day throughout the year, mainly in areas 1, 2, 4, 6, and 16.

Richardson's Ground Squirrel (Spermophilus richardsonii)

The major visible mammal species found throughout the area from 03 21 to 10 03.

Badger (Taxidea taxas)

Rare, found once in area 2.

Striped Skunk (Mephitis mephitis)

Rare, one found dead in area 2 and one found after dark in the same area.

White-tailed Deer (Odocoileus virginianus)

Fairly common as indicated by tracks, seen on three occasions, once a group of five animals in area 3.

Effects of Man

Railroad construction and tracks (C.N.R.) have shaped, helped preserve and dominate the whole area. This construction has disturbed much of the slope at various times in the past. Leveling and grading for the industrial sites on the top of the hill or plateau has destroyed or disturbed virtually all the natural features on the top.

However, there still remain a few small areas that have not been disturbed. These, together with areas that were disturbed a long time ago (75 years) and recently disturbed (20 and 40 years) areas, provide a diverse group of habitats.

Neglect and apathy by all, city, railroad and public has resulted in these areas becoming a trap or dump for all kinds of garbage. While this has made the area very unsightly, it does not seem to affect the vascular plants.

There are very few lichens, a good indicator of pollution; however, there are not too many trees or rocks for them to grow on in the immediate area. Other studies (Scholefield 1974) on lichens just across the river (approx. 1 km) tend to confirm that there is substantial pollution in the air.

There is some disturbance by four wheel drive vehicles and motorcycles. The bikers try to hill climb the escarpments and the four wheel drive vehicles drive all over the area.

The Future of the Area

Due to the slope of the escarpment and the placement of the rail lines I do not think there is much danger from additional development in most of the area. The small areas that are most natural are very small and separated from each other. They would not be suitable for a normal natural area or park. However, this whole area and others like it should be cleaned up and protected. By this I mean that garbage and junk should be removed and stiff penalties for future dumping be imposed. Fences to keep out off -the-road vehicles should be placed at strategic locations. This would allow natural sucession to restore damaged areas.

With a minimum of care these small pools of native plants and animals will remain for all time, providing additional places where people can walk to see many of the plants and a few of the animals that are native to the area. This is specially important in these industrial subdivisions where there are many people working with little else in the way of recreation during their noon breaks.

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NATURALISTS' BOOKSHELF

A Field Guide to the Birds East of the Rockies

by Roger Tory Peterson. 1980. Houghton Mifflin, Boston. 384 pp. $12.95 paperback; $21.00 hard cover.

This is the best field guide for its region ever published. The only problem is that the region is not quite as claimed on the cover of the paperback - east of the Rockies - or as stated on the title page - eastern and central North America. Nor is the western boundary an ecological one,

as claimed on page 8. The book is, in fact, a complete revision of Peterson's eastern guide, concentrating on birds east of the 100th meridian - 60 miles east of the Saskatchewan-Manitoba border. So, how good is it for the Prairie Provinces?

It includes about 90% of the birds found in Alberta (missing 32 species) and almost 95% of Saskatchewan species (23 omitted). Those missing are mainly birds associated with the Cypress Hills, foothills and mountains. Six Manitoba species are omitted.

The 34 Prairie Province species that I found missing are (A = Alberta, S = Saskatchewan, M = Manitoba): Trumpeter Swan (AS), Bewick's Swan (S), Blue Grouse (A), White-tailed Ptarmigan (A), Sage Grouse (AS), Chukar (AS), Common Crane (A), Mountain Plover (AS), Wandering Tattler (A), Sharp-tailed Sandpiper (AS), Glaucous-winged Gull (A), Ancient Murrelet (AM), Band-tailed Pigeon (AS), Pygmy Owl (A), Black Swift (A), Calliope Hummingbird (AS), Lewis' Woodpecker (ASM), Williamson's Sapsucker (AS), Hammond's (A), Dusky (AS) and Western (A) flycatchers, Western Pewee (ASM), Violet-green Swallow (ASM), Steller's Jay (AS), Clark's Nutcracker (ASM), Mountain Chickadee (AS), American Dipper (AS), Bendire's Thrasher (S), Sage Thrasher (AS), Townsend's (AS) and MacGillivray's (AS) warblers, Cassin's (A) and Gray-crowned Rosy (ASM) finches, and Brewer's Sparrow (AS).

What about the illustrations? There are 136 plates in this book compared to 60 in the western Peterson and 157 in Robbins (which covers all of North America (Peterson 1969; Robbins *et al.* 1966). The following table compares the number of illustrations for six of the larger, more common or more difficult groups of Prairie Province species in the three guides:

	No. of species illustrated			No. of different illustrations		
Group	Western	Eastern	Robbins	Western	Eastern	Robbins
Waterfowl	37	38	38	184	292	289
Hawks-eagles	19	20	20	67	109	104
Shorebirds	39	41	44	103	178	187
Gulls	13	17	16	28	84	68
Warblers	26	33	35	44	101	157
Sparrows	20	19	20	31	37	60

While the Robbin's guide is more complete and more profusely illustrated, its colour reproduction is often poor, in my experience.

The new plates, most with four to six species each, permit larger figures and more detail. The plates still have the advantage over Robbins of using arrows to point out diagnostic field marks. All the pictures are in colour except for eleven plates of waterfowl, shorebirds and diurnal birds of prey - all flying - most of which are also shown in colour on other plates. Colour reproduction is excellent. However, before buying this new guide check pages 153 (accipiters) and 221 (bluebirds); in some copies these plates, at least, are paler than in others. It may be that in all copies the phoebe -pewee plate appears to be too grey. The last seven plates depict 99 accidentals from around the world (but not from western North America) and aviary escapees.

Some species are depicted differently than in the western Peterson, e.g., head pattern of the winter Eared Grebe and the amount and size of

spotting on Swainson's and Gray-cheeked thrushes (an improvement). The inclusion of a young Chipping Sparrow is good but the omission of an immature White-throat is unfortunate. Also not included are dark forms of Red-tailed and Ferruginous hawks as seen from below.

Another improvement is that the text now faces the illustrations, as in Robbins. It still contains information on descriptions, similar species, voice, world-wide range and habitat, condensed to about half that of the western Peterson; nest data are omitted. Because of their nature and because people hear them differently, many bird songs are difficult to describe in words. Nevertheless, having listened to recorded calls of Boreal Owls from Sweden (Kellogg 1975), Germany (Hardy 1980), and Edmonton (R.E. Gehlert, personal tape) - all similar - I could not have identified them from Peterson's description - a "high-pitched bell or dripping of water" or "ting -ting-ting... ." The Handbook of British Birds (Witherby *et al.* 1943) does a much better job: "repetition (2-3 secs) of a single ... musical note ... '*poo*-poo-*poo*-poo... ," which description is largely repeated in Peterson's European bird guide (Peterson *et al.* 1974).

Another innovation is the addition of 390 maps for breeding, migration and wintering ranges east of the 100th meridian in North America. With only six per page, the maps have the advantage of showing state and provincial boundaries. For some species nesting only in the Arctic, breeding ranges are shown almost to the Yukon. The map section is of little use to bird-watchers in Alberta and Saskatchewan but is excellent for Manitoba. A comparison of Peteron's Manitoba breeding ranges with those in The Birds of Alberta (Salt and Salt 1976) shows major differences only for Great Blue Heron, Black Duck, Golden Eagle, Sandhill Crane, Magnolia Warbler, Rusty Blackbird and Rose-breasted Grosbeak. There are no maps for California Gull and Mountain Bluebird.

This paperback is well bound, contributing to its cost. However, it will not fall apart like so many soft-cover Robbins'. There is a good introductory chapter on identifying birds, including three cautionary paragraphs on sight records. Omitted from the "life list" provided at the front of the book are Prairie Falcon, Red-headed Woodpecker, Green-tailed Towhee and Golden-crowned Sparrow.

One possible drawback is the sequence of plates - from swimming birds to waders to terrestrial species. But parts of this arrangement are difficult to understand: cormorants and pelicans are 38 pages apart; coots and gallinules occupy a plate in the midst of waterfowl but not adjacent to similarly coloured scoters; grouse precede birds of prey; longspurs and juncos are just before cardinals and other colourful finches. Why are shrikes not on the same page as Mockingbird and solitaire? The index may be the fastest way to find some species for a while.

Then there are some birds' names. "Common Egret," used in both the western Peterson and Robbins, does not appear in the new guide; it is the "Great Egret." Marsh Hawk appears as Northern Harrier. Slate-colored and Oregon juncos which were combined into Dark-eyed Juncos a few years ago are listed here as Northern Juncos. Short-billed and Long-billed Marsh wrens become Sedge and Marsh wrens, respectively. There are other, more easily interpreted, changes.

In spite of the above criticisms, if you can live without the missing species, you will find that this is the best field guide for Canadian birds east of the Rockies.

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Reprinted from Blue Jay 39:59-62, 1981. Dr. Gollop is the former editor of the Blue Jay and current Prairie Provinces Region editor of American Birds.

NATURALISTS' BOOKSHELF

Birder's Guide to Southeastern Manitoba

by Norman J. Cleveland, Calvin W. Cuthbert, Gordon D. Grieef, George E. Holland, Philip A. Horch, Richard W. Knapton, Rudolf F. Koes, Nancy F. Murdoch, Wayne P. Neily, and Ian A. Ward. 1980. ECO Series No. 1, Manitoba Naturalists' Society, Winnipeg. 58 pp., paperback. $4.95 + 0.50 handling charge. Order from MNS, Room 214, 190 Rupert Ave., Winnipeg, Man. R3B 0N2.

The two main purposes of this book are to provide up-to-date information on distribution and abundance of birds in southeastern Manitoba and to aid birders in finding the best birding spots. With minor exceptions, both objectives have been accomplished. "Southeastern" Manitoba is defined by a map showing the western boundary just beyond the western edge of Lake Manitoba and the northern boundary to Highway 68 in the Interlake area. The southern and eastern boundaries are defined by the political boundaries of the U.S. and Ontario respectively. Included in the book then, are the southern beaches of Lakes Manitoba and Winnipeg, the city of Winnipeg, the Whiteshell, the Red River Valley, and most of the Manitoba Interlake south of the Great Canadian Shield. The text consists of an introduction with a brief description of the area plus various tips for birders, a series of aids to finding birds, and a species list.

Aids to finding birds include a series of site guides, 2 circular routes through the boreal forest (the part of the "shield" east of Winnipeg), and

short paragraphs on the best places and times to look for selected species. These paragraphs are grouped under "summer specialties" and "fall and winter specialties," but the latter include several permanent residents. The site guides are written well, and include good maps. They include such long favourites as the Delta Marsh, Victoria Beach, and Assiniboine Park (in Winnipeg), as well as new "hot spots," such as the fabulous Oak Hammock Marsh and La Barriere Park. Missing from the Winnipeg area are Brookside Cemetery and Kildonan Park, both popular with birders when I lived there. A more noteworthy omission is the Shoal Lakes, much frequented during the A.G. Lawrence era (1920s through 1950s) and the decade of the two Harolds (Hosford and Mossop (the 1960s)). Although these areas are missing as guides, all 3 are mentioned under some of the species accounts, and their omission is primarily a reflection on current birdwatching activities.

The species list includes symbols of status in the area, a calendar chart indicating when each species is normally found there and other dates on which it has occurred, and a line for each species or habitat and/or location(s) where it has been found. The list is intended to include all species documented since 1945. To be included, a species must have been identified by at least 2 competent observers, or there must be a specimen or recognizable photograph. By these criteria, the list seems relatively complete, although at least one species (Gray-headed Junco) identified by at least 4 competent observers (Harold V. Hosford, Martin K. McNicholl, David Mossop, Harold Mossop) and photographed was missed even though the record was published. The only printing error that I noted was the use of the same symbol for 2 occurrence categories in the legend to the calendar chart.

The Manitoba Naturalists' Society and the authors are to be congratulated on the production of a fine book. The excellent photographs, pleasing sketches, detailed maps, and readable text combine to make this volume both appealing and useful.

- Martin K. McNicholl
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NATURALISTS' BOOKSHELF

Naturalist Painter

by Dick Dekker. 1980. 96 pp., illustrated.
Western Producer Prairie Books, Saskatoon, Saskatchewan. $29.95.

It was a great pleasure to see Dick Dekker's work in print, his first full-length book in Canada, I believe, although he has many publications to his credit in Holland. This volume is a collection of 45 beautiful reproductions of his paintings, each accompanied by one page of his personal comments. The book is organised loosely in groups, with opening pages illustrating waterfowl arriving at one of the author's favourite spots, Beaverhill Lake, followed by several views of eagles in very diverse attitudes and situations, before the reader reaches the bird we most associate with Dick, the Peregrine. Other raptors and occasional shorebirds are included, and then the second half of the book is devoted to a wide range of mammals in their own typical surroundings.

Art criticism is not the object of this review, but if these are your kind of paintings you will love this book. However, beyond the paintings

there is a bonus in the writing, which is refreshing in its avoidance of well-worn remarks and familiar pieces of information, and concentrates instead on anecdotes from the author's own experience.

The layout of the book is also very pleasing, and this is no coincidence since the author was involved in the design. It is tastefully done.

One theme comes through quite strongly both in the writing and the art, and this is the strategy of the hunter and the hunted, which is something the author has a particular ability to speak on, by reason of the long periods of observation he has devoted to the creatures that interest him most. It is the subject many of us are a little uncomfortable with, but it is a fact of everyday life and, as Dick says,

> "Far from gloating over the fate of their victims, or sentimentalising their activities, one can appreciate the wild predators for what they are - creatures of beauty and superb ability that serve an important function in nature and add drama and interest for those who want to see it."

- L. Fenna
Ministik Hills Field Study Centre
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Footnote: Dick Dekker's paintings will be exhibited at the Gallery of Alberta bird painters to accompany the A.O.U. meeting in Edmonton in August, and may also be seen at the artist's home. - L.F.

RECENT PUBLICATIONS ON THE NATURAL HISTORY OF ALBERTA

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FAN AND CNF NEWS

FAN Summer Meeting - 17, 18, 19 July 1981. Wild Sculptures, 55 km northeast of Hinton. Campground - Emerson Lake, 50 km northeast of Hinton, 5 km from the start of the Wild Sculpture Hiking Trail.

Those ariving Friday evening will meet at the Information Booth on Highway 16 in Hinton at 8 p.m. People arriving Saturday morning will meet at the Information Booth at 10 a.m. to be led or directed to the Emerson Lake Campground.

The Wild Sculptures are a unique example of sandstone erosion in Alberta, differing in many ways from other "Hoodoo" formations in the province. They are strung out for 9 km along the north side of Sundance Creek and Sundance Lake. A hiking trail, 9 km and return has been developed along the many extensive outcroppings of the Wild Sculptures by St. Regis Pulp and Paper. The Wild Sculpture Trail may be travelled 9 km and return or a minimum of one or two km and return. Come and enjoy with FAN this little known part of Alberta.

- Fred Schutz

FAN Fall Meeting - The Lethbridge Naturalist Society will host the FAN fall meeting on Saturday and Sunday 19-20 September 1981.

Registration: 9:30-10 A.M. at the Nature Centre on the Nature Reserve.

Directions: From #3 Highway cross bridge over Oldman River, turn right at Indian Battle Park road. Travel 1/2 mile to Nature Centre.

SATURDAY 19 SEPTEMBER 1981

10 A.M. - Director's Meeting. Bring lunch.

10 A.M. - 4:30 P.M. Field trip. Bring lunch.

6 P.M. - Picnic at Indian Battle Park. Caterers for the meal and charge for same will be made at Registration.

Saturday P.M. speaker is Chip Beaty - University of Lethbridge.
Topic: Prairie Land Forms.

SUNDAY 20 SEPTEMBER 1981

6 A.M. - Self-guided early morning birding.

9 A.M. - Depart for Porcupine Hills field trip to Smashed-In Head Buffalo Jump, etc. Bring lunch.

ACCOMMODATION: Limited accommodations will be available to members who contact Mrs. Diana Williams by 7 September at: 610-32 St. S, Lethbridge, Alberta; phone 328-0036.

- Mary Lore, based on information conveyed by Doris Rhodes

Bill Gunn Receives Third Pimlott Award - I was pleased to learn from CNF Past President, Diane Griffin, that Bill Gunn of Edmonton was awarded the third annual Douglas Pimlott Conservation Award at the CNF meeting in Guelph, Ontario, this May. Unfortunately, Bill broke his arm shortly before the meeting while birdwatching in Arizona, but he nevertheless was able to get to the CNF meeting. Bill was until recently President of LGL Environmental Consultants Ltd., is well known among birders for his excellent bird song recordings, well known in the scientific community for his studies on bird -aircraft collisions, well known to the general public for his role in several CBC nature films, was President of the Wilson Ornithological Society, has represented Canada on the International Ornithological Congress, was a founder of the Long Point Bird Observatory, was very active in the Federation of Ontario Naturalists, etc., etc. - in short I can think of many reasons to emulate Bill, but can't imagine why he would emulate my broken arm! I am sure all FAN members will wish to join me in extending to Bill Gunn sincere congratulations on a much deserved honour. - M.K.M.

Deadlines for Project Reports

1. Alberta Flowering Dates - 31 October 1981
   Return to: Dr. Charles D. Bird
   Box 165
   Mirror, Alberta TOB 3CO

2. Alberta Christmas Bird Counts - 15 January 1982
   Mail to: Virginia Lang Young
   R.R. #1
   Busby, Alberta TOG OHO
   - where full count is to be published elsewhere, indicate reference as it should be cited.

3. Species Count Day (May) - Birds and Mammals - 15 July 1981
   Mail to: Allen N. Wiseley
   202 - 635 - 56 Ave. S.W.
   Calgary, Alberta T2V 0G9

4. Species Count Day (May) - Plants - 15 July 1981
   Mail to: J. Derek Johnson
   Northern Forest Research Centre
   5320 - 122 Street
   Edmonton, Alberta T6H 3S5

5. Prairie Nest Records Scheme - 1 October 1981
   Return to: Herbert W.R. Copland
   Manitoba Museum of Man & Nature
   190 Rupert Avenue
   Winnipeg, Manitoba R3B 0N2

CNF Resolution on Ecological Reserves in Alberta - The Canadian Nature Federation passed 8 resolutions at its 1980 annual meeting in Winnipeg, Manitoba. The text and background information for these resoltuions were published in Nature Canada 10(1), 1981:24. These involve the Garrison Diversion, proposed dams on the Stikine River, B.C., preservation of rivers, a commercial whaling moratorium, the long-delayed Grasslands National Park in Saskatchewan, a World Conservation strategy, and ecological reserves legislation. All should be of interest to FAN members (who should also belong to CNF), and the reader is referred to them, but as the Ecological Reserves resolution refers specifically to Alberta, it is also reprinted here in its entirety:

> 7 Ecological Reserves Legislation
>
> An ecological reserve is a legally protected natural area where human influence is kept at a minimum. In the early 1970s the International Biological Program identified numerous potential ecological reserves that were worthy of protection. The provinces of British Columbia, New Brunswick and Quebec proclaimed ecological reserves legislation in the 1970s, and the legislatures of Nova Scotia, Newfoundland and Saskatchewan passed ecological reserves legisation in the spring of 1980.
>
> The Canadian Nature Federation urges the governments of Alberta, Manitoba, Ontario and Prince Edward Island, and the federal government with respect to the Yukon and Northwest Territories, to take immediate steps to legislate ecological reserves acts and then establish a representative system of ecological reserves.

Federation of Alberta Naturalists - Standing Committees

1. RESEARCH - Al Wiseley, Chairman and Derek Johnson
2. WILDERNESS, PARKS AND NATURAL AREAS - Mike McIvor, Chairman
   Don Stiles, Mike O'Shea, Myrna Pearman, Lloyd Lohr.
3. PUBLICATIONS - Pat Clayton, Chairman
   John Powell, Martin K. McNicholl (*ex offico*),
   David M. Ealey (*ex offico*), Virginia Young (*ex offico*)
4. ENVIRONMENTAL EDUCATION - Mary Bailey, Chairman
   Myrna Pearman, David M. Ealey

5. ENDANGERED SPECIES - Lloyd Lohr, Mike O'Shea, Fred Schutz, Derek Johnson

6. FINANCE COMMITTEE - Dave Ealey, Chairman
Charles Harper, Fred Coffee (*ex offico*), Maryhelen Posey

7. PUBLICITY COMMITTEE - Dorothy Dickson, Chairman
Grace Neill, Diane McIvor, Harvey Gardner, Hazel Ross,
Charles Harper, Peter De Mulder, Jean Burgess, Bill Nesbitt

8. BY-LAWS AND CONSTITUTION - Harvey Gardner, Chairman
Eric Tull, Dorothy Broadbent

9. LAND USE COMMITTEE - Maryhelen Posey, Chairman
Dorothy Broadbent, Fred Schutz, Mike McIvor.

10. PUBLIC ADVISORY COMMITTEE - Dorothy Broadbent is the Representative
John M. Powell - Alternate
N.B. Advance notice required if neither is able to attend.

11. ALBERTA ECOLOGICAL SURVEY - John Powell is the Representative
Charles Bird is the Alternate

12. FISH AND WILDLIFE - John Powell is the Representative
David M. Ealey is the Alternate

13. CANADIAN NATURE FEDERATION representative is David M. Ealey

14. FEDERAL PROVINCIAL WILDLIFE CONFERENCE - Delegate: David M. Ealey

15. ALBERTA ORNITHOLOGICAL RECORDS COMMITTEE: Chairman: Ian Halladay, Calgary; Jim Salt, Edmonton; Peter Sherrington, Calgary

16. LONG RANGE PLANNING AND POLICY COMMITTEE: Myrna Pearman, Maryhelen Posey, Pat Clayton, John M. Powell, Mike McIvor, Dorothy Broadbent, Martin K. McNicholl, David M. Ealey

1982 Annual General Meeting - Programs and Fees:

Camp Caroline - Friday 29 January 1982 - 7:00 p.m.
Saturday 31 January 82
Sunday 1 February 82 - depart by 3 p.m.

Rates:	Individual	- $47.00
	Husband & Wife	89.00
	Youths, 18-21	42.00
	13-17	37.00
	8-12	32.00
	3-7	25.00
	0-2	free

Meals included in above and are served @ 9:00 a.m., 12:30 noon, 5:30 evening. Bring own sleeping bag or bedding. Bring swim suit for indoor pool. Make reservation now or by 10 January 1982 by sending $25.00 or full amount to the treasurer, Fred Coffey, Box 1472, Edmonton, AB T5J 2N5. (Limited accommodation)

- Mary S. Lore

Nature Guide to Alberta - F.A.N. and Prov. Museum - All members of F.A.N. and corporate member clubs are invited to submit comments on errors, deletions, oversights and additions to the text of the first edition of "A Nature Guide to Alberta," so that when it is revised these items may be considered. The second edition will presumably be brought out by the Provincial Museum and Archives as before, and F.A.N. input will not only be desired and encouraged, but should be substantial. Any Natural Area not previously recognized that

deserves inclusion should be mentioned; or some local person should be encouraged to write an account. Submissions should be sent to David Spalding, Curator, Provincial Museum and Archives of Alberta, 12845 - 102 Ave., Edmonton, AB T5N 0M6, with a copy to FAN, Box 1472, Edmonton, AB T5J 2N5.

These suggestions were submitted by the Editorial Advisory Committee of FAN re "A Nature Guide to Alberta."

- Mary S. Lore

THE PRESIDENT'S PAGE

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by Mary S. Lore
1621 - 4 St. N.W.
Calgary, Alberta T2M 2Z1

A splendid attendance - seventy plus! - good weather; wonderful meals together with three fine programs and two stimulating business meetings was the order of the 31 Jan. - 1 Feb. 1981 function at Camp Caroline. Adults and children enjoyed the out-of-doors and the inside swimming pool and the occasion was a first for a third of those who attended this year. Yes it was a success and we are returning to Camp Caroline for the 1982 AGM, by popular demand, although Mike and Diane McIvor had thoroughly investigated other choices in Alberta which could be suitable for our AGM. Take note that the 1982 prices will be increased by several dollars, but we hope to see many of you in 1982 at Camp Caroline.

The Camp Caroline business director had been concerned that a pipeline company wanted to place the pipeline in the area of the beaver ponds on the property and I suggested that FAN would assist in trying to get it moved. However, when the time came for the laying of the pipeline, the director approached the officials in charge and requested that it be put on the other side of the fence instead of on the Camp Caroline property and they obliged!

Several years ago, Maxine O'Riordan and I spent two weeks assisting the young campers with an environmental education program, using materials we had gleaned from Joy Finlay and Mary Bailey and including some of our own and the natural objects on site. It was interesting and several hundred children were involved in the program. The instructors at Camp Caroline have now made this a regular part of their summer program and have adapted the materials that we used and all their campers are involved with instruction on nature appreciation and environmental education. It is a lovely setting for this type of instruction and with a captive audience. I would like to commend Camp Caroline for adding this dimension to their summer program for young people.

The Board of Directors requested that the Hon. John Roberts, the federal minister responsible for the environment and parks, be commended for his support and positive input for the Grasslands park. This has been done and the minister has replied.

The latest copy of Environment Update as well as the media have been informing the public that the minister is active in the areas of acid rain, chemical pollution, clean air problems and is making every effort to clean up, control and educate the public to prevent such happenings.

We thank all those who responded to the 'pink letter' request for membership renewals - we realize that it is easy not to know when your membership has expired. Please show your copy of the Alberta Naturalist to other members in your club or to friends - they may wish to subscribe and we would welcome each one. THANK YOU IN ANTICIPATION OF YOUR SUPPORT FOR THE A.N. AND F.A.N.

EDITOR'S PAGE

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by Martin K. McNicholl
128 Silvergrove Hill N.W.
Calgary, Alberta T3B 4Z5

In spite of the health problems and the busy schedules of the Editor, Assistant Editor (Dave Ealey), and Corresponding Secretary (Vanny Case), the March, April and June issues of the A.N. at least went to press in the right months. The March issue was a bit delayed while Vanny recovered from major surgery, but she valiantly completed it on time for me to take it to Dave in Edmonton in March, and even Calgary members received it in April. The April supplement was delayed by one report, so I was not able to get it to Vanny early enough for me to proof-read it before leaving for holidays. It was sent to Dave by courier during a bus strike, and taken to the printer in early May by Publications Chairman, Pat Clayton, so should reach members in May. As I write, the June issue is nearly complete (a week before the FAN meeting), so I expect to get it to Vanny before the FAN meeting, and after proof-reading, correcting and lay-out may reach our members in June - although I am slowed down by a broken arm and Dave has a busy schedule to work around. I wish to thank all authors, photographers and artists who have sent material in the last 2 years for your support of the A.N. Virginia Young should have a comfortable backlog to start her third term. To date I have edited 2 articles (on ground squirrels and ticks) and a book review and forwarded them on to her, and there is a long list of promised and potential articles and reviews for her to anticipate. I trust that all readers will give her full cooperation.

After many delays, the special historical issue is now close to completion. At the time of writing I am missing only 2 items, both of which have been written in at least first draft. Chapters are at various stages of typing, and members should receive the issue in late June or July. The special banding issue is also progressing well. We have enough material now to publish it, with other articles close to completion. It should be out in time for the A.O.U. in August. All FAN members will receive a copy of the historical issue. The banding issue will be sent free only to contributors, but members may order it. Watch the September A.N. for price. We hope to have additional special issues in the future.

Alberta had a very mild winter this year, but that did not prevent the usual spring icy rain storms. One such cost me a broken arm while a passenger in a car which encountered a pole, just 3 days before my holidays. After 3 days in hospital, Francis Kwik and I hurried to El Coronado Ranch on Turkey Creek in the Chiricuahuas of southern Arizona in time to attend the annual meeting of the Western Bird Banding Association. I presented a paper there and was also elected First Vice-President, but the highlight of the meeting was Bill Gunn's presentation of a film on swans. Bill is the "G" of LGL Environmental Consultants Ltd., and he and his wife are residents of

Edmonton (or rather, near Edmonton) most of the year, and of Portal, Arizona in winter. The next day, Bill endeared members even more when he led us into South Fork to view a Coppery-tailed Trogon, one of the 14 species new to me on the trip (we also went to w. Arizona and Calif.), and Lucy Gunn provided us with her lovely yard for lunch. The trip was a joy of Saguaro in bloom, birds, snakes and relaxation!

CLUB NEWS

Lethbridge Naturalist Society News - Our summer program schedule is already in progress but the remaining hikes are listed below and anyone visiting Lethbridge at any time is welcome to attend. For more information phone Robert Hall - 327-8866.

5 July - Sofa Mountain
18 July - Goathaunt Landing, Waterton Park (expect to pay boat fare return)
8 August - Drywood Creek Falls
22 August - Mokowan Butte, Belly River

We have had a very mild winter with little snow - the result being an increase of animal populations. Mike and Diana Axtell, hiking the Pakowki Lake area (S.E. corner of Province) on 23 January 1981 saw a group of 75 White-tailed Prairie Hare (*Lepus townsendii*), more commonly known as the jack rabbit. Of course they were very conspicuous by their white winter colouring contrasting against the brown short grass prairie. Because of its size, this hare, which averages about 10 pounds in weight need only fear the Lynx, Coyote or Red Fox as predators. So while the larger animals were on the increase because of easily obtainable food supply, the jack rabbit probably declined.

Remember the F.A.N. meeting in Lethbridge this coming September. There's something to interest every age group.

- Hazel Ross

Lethbridge Naturalist Society Outings - The following is the list of outings proposed for the Lethbridge Naturalist Society for the summer of 1981:

26 April	Chin Lake	birding	Bob and Liz Hall
9 May	Ridge Reservoir Stirling Lake	birding	Mike O'Shea
16 May	FAN at Edmonton		
30-31 May	Count Day. Picnic at Frank and Cathy Russell's		
6 June	Porcupine Hills Skyline Drive	general	Frank Harper
20 June	Manyberries	flowers Pronghorn Antelope	Gordon Ross
5 July	Sofa Mountain	flowers	Ken Goble
18 July	Goathaunt Landing Waterton Lake	hiking animals	Simon Lunn
8 August	Drywood Creek Falls	general	Lynn Richards
22 August	Mokowan Butte, Belly River	hiking	Ken Goble

Meet at SW corner Zeller's for each hike.

26 April. Meet at 9:30 am.
9 May. Meet at 9:00 a.m.
All other outings meet at 8:30 am.

If there are any questions, please contact: Dr. R. Hall at the following address: 2602 - 6 Avenue South, Lethbridge, Alberta, T1J 1C7

- Mary E. Bailey

Red Deer River Naturalists - The nominating committee of Red Deer River Naturalists presented the following slate of officers for the 1981 term:

President	Michael O'Brien, 20 Riverview Park, Red Deer
Vice-President	Maxine O'Riordan, 41 Springfield Blvd., Red Deer
Secretary	Minnie Cunningham, 6108 60 St. Box 262, Red Deer
Treasurer	William Nesbitt, Box 701, Rimbey, Alberta
Directors	Lynda Parrington, 71 Patterson Cres., Red Deer
	Chris Bruels, R.R.#3, Red Deer
	Joy Fowler, 3710 43 Ave., Red Deer
	Ken Larson, Box 44, Benalto, Alberta
	Linda Gathercole, Box 44, Benalto, Alberta
	Floyd Hansen, 75 Allan St., Red Deer
F.A.N. Directors	Fred Schutz, R.R.#2, Bluffton, Alberta
	William Nesbitt, Box 701, Rimbey, Alberta

Mrs. Norah Lane of Brandon, Manitoba, presented a program about bluebirds at the regular meeting of the Red Deer River Naturalists on Thursday, 26 February 1981 at the Lindsay Thurber Comprehensive High School Library. In 1959, the late Jack Lane of Brandon realized that he had not seen a bluebird in 20 years and his son had never seen one. The number of bluebirds had peaked in the 1940s but declined drastically with the importation of the House Sparrow and the Starling. Dr. Lane began building bluebird houses and the group now maintains 4500 houses along 1600 miles of bluebird trails. Dr. Lane died in 1975 but Mrs. Lane and others have carried on with his work.

- Minnie Cunningham

Other Clubs - The Buffalo Lake Naturalists have a busy indoor and outdoor program planned for the entire year, with ski outings and films held in the winter, a slide and contest night in March, bird hikes and camping both locally and farther afield (e.g. Chain Lakes, David Thompson country) in the spring, summer and fall, and a pot-luck supper planned with the Christmas bird count next December. Their program accompanied their newsletter for February, making them the best planned FAN club of which I am aware. In the same newsletter, Trudy Grafe outlines the activities of the club's Environmental Protection Committee during its first year of work. Besides several provincial concerns, BLN is especially concerned about stabilization of Buffalo Lake. The March 1981 issue of the Calgary Field Naturalists' Newsletter reports a planned get together at the home of Don Stiles to prepare for the bluebird season and a lecture by Lu Carbyn on wolf predation. The March 1981 issue of the Edmonton Bird Club's newsletter announces the club's underwriting of FAN's bird-banding publication and a special price for Bob Lister's book on Beaverhill Lake for A.O.U. visitors this summer. Dick Dekker prepared a brief for the club on the provincial government's land plans for the Beaverhill area. Dick's new book is reviewed by Lois Fenna in this issue of the A.N. The March and April 1981 issues of the Edmonton Natural History Club newsletters reported indoor programs on tropical America and African termites, and field trips to Wabamun Lake, Whitford Lake, and the usual Beaverhill Lake (the latter with EBC). - M.K.M.

NOTES AND NEWS

Alberta Banding Effort, 1978 - The second report on banding in Canada (Hyslop and Poulin 1980, Can. Wildl. Serv. Progress Notes No. 117) summarizes banding effort by province and territory for 1978. In that year 18 banders banded 28,724 birds of 122 species in Alberta. Non-game birds constituted 83% of the species banded in Alberta, but only 37% of the individuals banded. Mallard, Blue-winged Teal and Canada Goose were the game birds banded most frequently in Alberta, while most banded non-game birds were Tennessee Warbler, Tree Swallow and House Sparrow. A table summarizes totals for each species in the province in 1978. - M.K.M.

Naturalists outnumber hunters - Non-hunting naturalists have long run into an argument that wildlife management must be dedicated primarily to "game" species because hunters are more numerous and active than naturalists. In recent years, however, more and more state and provincial wildlife departments have become involved in non-game programs. A national survey has recently shown that people who watch birds now far outnumber those who hunt them, according to an anonymous report in Nature Canada 9(4):35, 1980. This report is based on a report presented to the Federal-Provincial Wildlife Conference last June by Federal Environment Minister, John Roberts. More details of this conference can be found in the report by Maxine O'Riordan published earlier in the A.N. A reflection of the recent upsurge in interest in non-game wildlife may be the choice of bird-watching as the first topic for a new interview series on hobbies and recreational activities on CBC's "For Today" show in Calgary this March. City naturalist, Harold Pinel, was interviewed for the series' debut. - M.K.M.

Dorothy Dickson Receives Achievement Award - Calgary FAN Director, Dorothy Dickson was recently presented with a 1980 Alberta Achievement Award "for outstanding service in environmental education and conservation; with the gratitude of the people and government of Albert." Nominees for the award must have done at least 10 years voluntary work which affects the quality of life in Canada, and this work must be in a field not connected with their profession. Although Dorothy appreciated the nomination, she felt it was cyncial of the government to give it to a conservationist, given the government's record on conservation issues. Nevertheless, Dorothy is to be congratuled on this recognition of her hard-working efforts on behalf of the citizens of Alberta. - M.K.M., based on a letter from Dorothy in response to my inquiries.

Alberta Scores 14 High Species on 1979 Christmas Bird Counts - Alberta counts published in Amer. Birds scored Canadian highs for 14 species (in some cases the only occurrences in Canada), according to a summary by Robert R. Anderson in Amer. Birds 34:708-710, 1980. These were: Ross' Goose (Calgary), Blue-winged Teal (Banff-Canmore), Gyrfalcon (Wabamum Lake & 7 non-Alberta counts), Prairie Falcon (Calgary), Spruce Grouse (Bow Summit), White-tailed Ptarmigan (Bow Summit), Hawk Owl (Bow Summit & 2 non-Alberta counts), Northern Three-toed Woodpecker (Banff-Canmore & 1 other count), Black-billed Magpie (Edmonton), Boreal Chickadee (Wildlife Reserve of Western Canada), Dipper (Banff-Canmore), Townsend's Solitaire (Banff-Canmore), and Bohemian Waxwing (Edmonton). Unfortunately, the only North American high listed by Burt L. Monroe Jr. (Amer. Birds 34:703-707, 1980) is in error - 1 Great Gray Owl at the Western Reserve of Western Canada, as Anderson's summary for Canada lists 2 at Pinawa-Lac du Bonnet, Manitoba. - M.K.M.

New Book on Alberta Pronghorns - A new book is announced as available, free in Can. Soc. Zool. Bull 12(1):19, 1981: Mitchell, G.J. 1980. The Pronghorn Antelope in Alberta. Dept. of Biol., Univ. of Regina, Regina. 165 pp. The book can be ordered from Dr. G.J. Mitchell, Dept. of Biol., Univ. of Regina, Regina, Sask. S4S OA2.

Birds Featured at Ring House Gallery - On 25 March 1981 I attended the opening of "Birds of a Feather," an exhibit of the ornithology collection of the University of Alberta. The exhibit was held in the main floor rooms of Ring House Gallery on the university campus, as one in a series of exhibits of the university collections. The exhibit stressed the importance of a museum collection, explaining the various uses to which such a collection is used, and used birds to illustrate a number of systematic and evolutionary controversies in modern ornithology. It was prepared well, both technically (I did find a few spelling mistakes), and from a lay-out viewpoint, and was to be held for about a month - too bad it wasn't more widely publicized. - M.K.M.

Kootenay National Park - Bird Checklist - Many years of field observations and carefully kept notes recorded by naturalists, wardens and park visitors, have resulted in a bird checklist for Kootenay National Park.

The list was compiled from sightings dating back as far as 1937, when J. Munro and Ian McTaggart Cowan recorded 79 different birds within Kootenay National Park's boundaries. By 1974, the checklist had grown to 152 species. Now, 179 birds are included, 59 of which are definitely known to breed in the park. The list also includes 11 species which have not been positively identified, and so are treated as hypothetical.

The checklist provides information on seasonal status, as well as relative abundance for each bird species. The most common species seen in Kootenay National Park is the Common Raven, while the rarest is a Long -tailed Jaeger, only recorded once. The newest addition, the Prairie Falcon, was recently seen soaring over the meadows at Kootenay Crossing.

A new revised bird checklist is now available and has arrived just in time for spring birding.

Anyone wishing a free copy can request one by writing Kootenay National Park, Box 220, Radium Hot Springs, B.C. V0A 1M0 - Larry Halverson, Park Naturalist, Kootenay National Park.

Finlay, Jones Again Score High Banding Totals - Albertans again figured prominently in high species totals in the annual banding report for western states and provinces for 1979, summarized by Martha H. Balph (North Amer. Bird Bander 5:74-87, 1980). In a commentary on the report, Charles T. Collins (NABB 5:88-89, 1980) lists Edgar T. Jones of Edmonton as tied for second highest number of species banded (83), and comments that 8 individuals (other than agencies) banded over 2000 birds, Eddie Jones and Fred Hosea exceeding 3000 each. In fact, Hosea banded 2734, and it was Cam Finlay of Sherwood Park who also exceeded 3000, as partially corrected in NABB 5:127, 1980. Thus Eddie Jones at 3162 birds and Cam Finley with 3015 accomplished the highest non-agency individual banding totals in western North America for 1979. The following high species totals were by banders who work entirely or partly in Alberta (Benning, Fyfe and Kuyt totals probably include other jurisdictions): White Pelican - 7 (Prov. Mus. Alberta); Double-crested Cormorant - 265 (Prov. Mus. Alberta); Black Duck - 1 (Benning, Kuyt and

1 other); Blue-winged Teal - 1056 (Benning); Swainson's Hawk - 81 (Fyfe); Ferruginous Hawk - 147 (Fyfe); Gyrfalcon - 17 (Fyfe); Prairie Falcon - 104 (Fyfe); Merlin - 55 (Fyfe); Ruffed Grouse - 1 (Trann); Sora - 4 (Kuyt); American Coot - 117 (Kuyt); Black Tern - 1 (Kuyt); Great Horned Owl - 66 (Fyfe); Hawk Owl - 4 (Gehlert); Great Gray Owl - 2 (Gehlert); Short-eared Owl - 25 (Fyfe); Boreal Owl - 5 (Gehlert); Saw-whet Owl - 6 (Jones); Common (Yellow-shafted) Flicker - 5 (Jones); Downy Woodpecker - 9 (Jones); Eastern Kingbird - 4 (Trann); Great Crested Flycatcher - 6 (Trann); Eastern Phoebe - 6 (Finlay); Yellow-bellied Flycatcher - 2 each (Jones, Trann); Alder Flycatcher - 19 (Jones); Least Flycatcher - 79 (Jones); Purple Martin - 718 (Finlay); Blue Jay - 32 (Finlay); Common Crow - 45 (Jones); Black-capped Chickadee - 110 (Finlay); Gray Catbird - 19 (Jones); Brown Thrasher - 7 (Jones); Veery - 3 (Jones); Mountain Bluebird - 570 (Finlay); Solitary Vireo - 6 (Jones); Red-eyed Vireo - 53 (Jones); Philadelphia Vireo - 3 (Trann); Black-and-White Warbler - 30 (Jones); Tennessee Warbler - 1024 (Jones); Yellow Warbler - 97 (Jones); Magnolia Warbler - 20 (Jones); Cape May Warbler - 8 (Jones); Yellow-rumped (Myrtle) Warbler - 90 (Jones); Black-throated Green Warbler - 2 (Jones); Bay-breasted Warbler - 6 (Trann); Blackpoll Warbler - 79 (Jones); Ovenbird - 78 (Jones); Northern Waterthrush - 17 (Jones); Connecticut Warbler - 6 (Jones); Mourning Warbler - 18 (Jones); Canada Warbler - 9 (Jones); American Redstart - 148 (Jones); Northern (Baltimore) Oriole - 69 (Jones); Rose-breasted Grosbeak - 15 (Jones); and Clay-colored Sparrow - 24 (Jones). Also of interest to Albertans will be the total of 1252 Blue Grouse banded by Rick Lewis and Fred C. Zwickel of the University of Alberta, although the work is done on Vancouver Island. - M.K.M.

New Wildlife Society - Canadians involved in wildlife management have long felt a need for a Canadian organization similar to the Wildlife Society, based in the U.S.A. A new society has formed this year: WSC/SFC (Wildlife Society of Canada/Societe de la Faune du Canada). This new society has issued its first newsletter and a set of by-laws in both English and French. They planned to elect their first executive in April and hold their first annual meeting of the executive at the Federal-Provincial Wildlife Conference in June. Alberta representative is: Lu Carbyn, Canadian Wildlife Service, Room 1000, 9942 - 108 St., Edmonton, Alberta, T5K 2J5. - M.K.M., based on newsletter, by-laws and background information.

CONSERVATION NEWS

CNF Policy on Rural Land Use - The following policy statement by the Canadian Nature Federation is of particular interest to prairie naturalists and is thus reprinted here in full from Nature Canada 9(4):30, 1980:

"We believe that development and nature conservation need not conflict. Sustainable development is dependent upon conservation of natural resources, a fact clearly illustrated in countries where poor and undernourished people who are dependent on the land for survival are pushed to destroy the few resources available to them. Trees, shrubs and crop wastes needed for holding and regenerating fertile soil are stripped for fuel.

It may not be immediately apparent that the relationship also holds true in industrialized countries such as Canada. Current agricultural practices such as removal of vegetative cover and wetlands, misuse of herbicides and fertilizers and uncontrolled burning by farmers have severe effects on

Canadian wildlife and its habitat while at the same time reducing agricultural productivity in many ways:

- Land clearing eliminates hedgerows and windbreaks, many of which were planted in the 1930s as anti-erosion measures. In the last 50 years up to 50 per cent of the original prairie topsoil has been lost to erosion.
- The widespread use of drainage ditches hastens the rate of run-off, carrying topsoil into rivers. This process has apparently increased flooding along major waterways because precipitation can no longer soak gradually into the ground or collect in depressions where it recharges groundwater supplies.
- The burning of stubble and 'waste' land reduces the amount of organic matter returned to the soil. Not only is soil lost to erosion but soil formation is also impeded.
- The trend to monoculture promotes favourable conditions for insect pests and disease. Greater and greater amounts of pesticides, which kill beneficial as well as detrimental insects, are needed.

For the farmer it becomes a vicious circle. Poor farming practices, urban encroachment and pollution, which have reduced the amount and productivity of the land, tax his ingenuity to produce the quality and quantity of food demanded by Canadians. Since he is under considerable pressure to intensify agriculture, the common reaction is to push farming onto marginal lands. Wildlife suffers as more habitat goes under the plow.

We argue that conditions which benefit wildlife are also good for agriculture. Wetlands recharge water tables and provide habitat for waterfowl. Shelterbelts help prevent erosion and provide wildlife habitat. Crop rotation and diversification reduce the need for pesticides. Proper soil husbandry reduces the need for large amounts of fertilizers, much of which ends up in watercourses.

The Canadian Nature Federation is calling for a national rural land-use strategy which would recognize the important role of wildlife in an agricultural economy. Such a policy would encourage farmers to increase productivity by protecting soils on existing croplands rather than by reclaiming wildlife habitats whose value is greater for conservation than intensive agriculture.

Governments could help farmers by:

- Expanding education programs that stress the importance of wildlife habitat and encourage farmers to consider nature conservation as compatible with other primary land uses.
- Maintaining closer liaison with voluntary organizations and assisting them financially in order to provide the best available advice and practical aid to farmers.
- Preparing management guides for specific habitats.
- Providing incentives to farmers to maintain wildlife habitat through such means as increased government insurance against wildlife damage to crops and payment of expected returns from equivalent agricultural uses.

We therefore propose a rural land-use strategy that would increase the ecological awareness of farmers and provide incentives to maintain wildlife habitat on agricultural land. Given the will, a policy of wise land use can

be formulated which would provide for both increased food production and the conservation of wildlife. Such a strategy clearly promotes sustainable development."

Symposium on Non-game Bird Management - As interest in non-game species wildlife management grows, more state and provincial programs are becoming involved with non-game species. A reflection of this interest is shown by the number of workshops and management meetings held in the last few years related at least in part to this topic. One of particular interest to Alberta naturalists because it deals with two major habitats of this province is: DeGraff, R.M. and N.G. Tilgham. 1980. Management of western forests and grasslands for nongame birds. Workshop Proceedings. USDA Forest Serv. Gen. Tech. Rept. INT-86. Although dealing specifically mostly with the U.S., Richard Fyfe's work on raptors in Alberta features prominently in a paper on raptor management and many of the 36 papers will be of interest to Albertans, including papers on effects of grazing on bird habitats, nongame bird management in wetlands, use of montane meadows by birds, birds in aspen, snag use by birds, management for cavity-nesting birds, and others. Enquiries for the report should be addressed to: Intermountain Forest and Range Experiment Station, Rocky Mountain Forest and Range Experiment Station, and Intermountain Region, U.S. Department of Agriculture, Forest Service, Ogden, Utah 84401 U.S.A. - M.K.M. - with thanks to John Powell for suggesting this note.

Hunter Training and Wildlife Conservation - Although many of our members will be aware of the hunter training course offered by the Alberta Fish and Wildlife Department, most probably do not realize that it is an extensive course running for 14 weeks and ending in a 3-day outdoor survival weekend at Caroline. The course teaches outdoor appreciation and is given to school children as an option and to adults in night sessions. In includes various aspects of wildlife management, camping equipment and survival techniques in addition to hunting topics. - M.K.M., based on an article in North Side Mirror 17 Feb. 1981:4 by Deborrah Kells Olson, and sent in by Mary Lore.

Natural Area at Red Deer College Retained - In January I received a letter from Don Wales of the Biology Department of Red Deer College informing me that a natural area behind the college was threatened by plans to construct student housing there. Since I had taken some students from a bird identification course to the site last fall, Mr. Wales asked me to write Dr. Bill Forbes, President of the College, about the value of such areas. In response to the letter I wrote on this matter, I received a letter from Dorothea Vickery, Executive Secretary to Dr. Forbes, informing me that the college had received a number of letters of concern and on careful consideration had decided to re-locate the residences. Congratulations to Dr. Forbes and the Board of Governors for listening to the concerns expressed and to Mr. Wales for his initiative on this issue. - M.K.M.

Solar Heating Planned for Jasper and Waterton - According to a report in Park/Scan 1(7):2-3, 1980, Parks Canada is planning to install solar heating systems in a number of Canadian National Parks facilities, including the swimming pools at Jasper and Waterton. This is part of a test program, with the first facility currently under test in Ontario. - M.K.M.

Wood Buffalo National Park - The Edmonton Chapter of the National & Provincial Parks Association of Canada presented a detailed brief at the public hearings on Wood Buffalo National Park in March 1981 in Edmonton. The brief supported the overall wilderness theme for the park, supported close monitoring of the Bison there, opposed commercial fishing, found

subsistence and recreational fishing acceptable (with subsistence taking precedence), supported native land claims for traditional purposes only, opposed various commercial and other developments, supported low-key, non-intensive tourism, and strongly recommended that the management plan be a legal document. - M.K.M., summarized from excerpts in the chapter Newsletter 7(6):1-6, 1981 - see Green, J. 1981 citation in the Recent Literature section of this A.N.

More on Blackfoot - A report from the Steering Committee on the Blackfoot Integrated Resource Plan (9 March 1981) includes a summary of the Public Advisory Committee brief mentioned in the Conservation News section of our March issue (A.N. 11(1), 1981), and an 8-page reply by Bud Miller, Associate Minister for Public Lands and Wildlife, Government of Alberta. Although Mr. Miller argues that public involvement has been extensive and he feels that public hearings are not appropriate, the Steering Committee still feels that public hearings should be held, and asks that concerned citizens express their concerns to Mr. J.E. Bud Miller, Associate Minister of Public Lands and Wildlife, 408 Legislative Building, Edmonton, Alberta T5K 2B6 - M.K.M., based on report by A.T. Blades, with thanks to whomever sent it to me!

Energy Forum at U. of A. - The second international forum on the human side of energy is to be held at the University of Alberta in Edmonton 16-19 August 1981. The goal of the forum is to promote quality planning and management by governments and developers by increasing awareness of impacts of resource developments on communities. Registration is $60.00 and brochures with program details can be obtained from: The Human Side of Energy: Alberta Conference Committee, Faculty of Extension, University of Alberta, Corbett Hall, Edmonton, Alberta, T6G 2G4. - M.K.M., summarized from brochure sent by D.M.E.

Canada - United States Environmental Council - The Canada - United States Environmental Council has called on both nations to take decisive steps to curb acid precipitation, including prompt agreement on an air-quality treaty designed to reduce sulphur and nitrogen oxide and toxic metal emissions to 1955 levels.

The council also has urged congressional extension and strengthening of the United States' Clean Air Act, which expires this year.

The actions of the binational nongovernmental body were taken Sunday at a meeting at the Shoreham Hotel in Washington, D.C. The four-day meeting was attended by delegates from 35 environmental organizations in the two countries.

In its acid precipitation resolution, CUSEC said both nations should immediately institute requirements for the washing of all coal being burned in existing facilities and use of the newest anti-pollution devices before resort to older equipment. Government agencies also were called on to grant unrestricted public access to all emission data.

The council pointed out that deadly acid precipitation is threatening thousands of lakes in both nations.

The delegates also called for steps to curb carbon dioxide emissions and long-range transport of other pollutants and steps to maintain air quality in national parks, wilderness and other pristine areas. Other anti-pollution

resolutions called for stepped-up actions against toxic wastes in the Great Lakes and a ban on ocean nuclear-waste dumping.

CUSEC urged Canada to establish a major park or wildlife preserve in northern Yukon Territory to complement the United States' Arctic National Wildlife Refuge. The proposed preserve would help to sustain the 120,000 -animal Porcupine Caribou herd, shared by the two nations.

Also urged were creation of a marine sanctuary in the Beaufort Sea and launching of a major study of Beaufort whales and other marine life before permitting further offshore drilling in this arctic area. The council said it "deplores" continuation of Beaufort Sea oil and gas activity without adequate scientific studies looking toward protection of natural values.

In other actions, CUSEC:

- Urged the two nations to negotiate a treaty for the management and protection of the Porcupine Caribou herd and its habitat.
- Called for U.S.-Canadian support of an adequate global Law of the Sea treaty to regulate deep and seabed mining.
- Urged conclusion of a treaty to protect marine resources on Georges Bank, off the east coast.
- Called for U.S. and Canadian leadership on behalf of an antarctic "world preserve" and other steps to protect antarctic marine life in the context of proposals for oil and gas exploration in the region.
- Urged that alternatives be found to forestall increased Canadian electricity exports to the United States because of the adverse environmental implications of Canadian power development.
- Urged halting the Garrison Diversion Project in North Dakota until it is modified to protect Canadian rights under the Boundary Waters Treaty.
- Opposed British Columbia plans for two dams in the Grand Canyon of the Stikine River, whose lower portion flows through the newly established Stikine-LeConte Wilderness in Southeast Alaska.

- Rick Pratt,
Canadian co-chairman, CUSEC

CBC Publishes Conservation Book - Later this month (April 1981) the CBC will be publishing a major book on the threat to our delicate Northern environment posed by Arctic oil exploration. Naturalist John Livingston's book Arctic Oil vividly portrays the closely-knit ecology of the Far North, its beauty and its delicacy. He describes how the search for oil will be so fierce (as other energy sources diminish) that, sadly, any ecological sacrifice will be considered a small price to pay.

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Editor's Note: Ms. Brunton offered the A.N. a copy to review to which I have, of course, replied positively. - M.K.M.

New Survey of Raptors to Assess Status and Research Needs - The International Council for Bird Preservation has undertaken a major international survey on raptors to assess status of each species. Forms are being sent to knowledgeable observers in various areas. The survey will help in setting priorities for both further research and conservation funding. Richard Fyfe, chairman of the working group on birds of prey for Canada, sent me 20 of the forms to distribute to FAN members. These were sent to observers throughout the province, and the results will be reported in the A.N. when they become available. - M.K.M.

More on Wood Buffalo - The Calgary/Banff Chapter of NPPAC also presented a brief on Wood Buffalo National Park (see citation in recent literature section, this issue with the chapter as author). Naturally, the brief supports the same concepts as the Edmonton chapter (see above), but the emphasis is on the park as an important natural ecosystem and the brief stressed the need to maintain natural processes (including natural fires and natural diseases of the Bison). The chapter asks that Wood Buffalo National Park be classified as a World Heritage site. - M.K.M.

Restaurant Picketing in Banff? Rosemary Nation reports possible plans of the Calgary/Banff Chapter of NPPAC to check back lanes at Banff and picket restaurants with non-bearproof garbage (Calgary/Banff Chapter, NPPAC Newsletter March 1981:2). A list of such restaurants in conservation and naturalist publications would allow naturalists visiting Banff to select more responsible restaurants. - M.K.M.

ACID PRECIPITATION IN CANADA: ENVIRONMENTAL AND POLITICAL PROBLEMS

A Submission to the

Parliamentary Sub-Committee on Acid Rain

16 February 1981

Calgary, Alberta

on behalf of the Canadian Nature Federation

by Richard Pratt
Conservation Director

Effects of Acid Precipitation

The seriousness of acid precipitation effects should not be minimized. As stated by the Canada-United States Bilateral Research Consultation Group on Long-Range Transport of Air Pollution in their 1979 report:

> A growing body of evidence suggests that acidic precipitation is responsible for substantial adverse effects on aquatic ecosystems and possibly on terrestrial ecosystems and public welfare. Such effects include acidification of lakes, rivers, and groundwaters, with resultant damage to fish and other components of acquatic ecosystems; acidification and demineralization of soils; reduction of forest productivity; damage to crops; and deterioration of buildings and man-made materials. Such damage to metals, paints, masonry, statuary and other objects can affect the quality of

life as well as result in substantial replacement costs estimated to be hundreds of millions of dollars annually. These effects may be cumulative or result from peak acidity episodes.[1]

The 22 scientists in the Bilateral Consultation Group confirmed these conclusions in their second report of November 1980. The magnitude of the problem in certain aquatic ecosystems is demonstrated by findings that in Ontario, there may already be as many as 2000 to 4000 lakes acidified to a point where sport fisheries cannot be sustained[2]. Ontario is not the only victim of acid rain damage in Canada. Acid river water has eliminated recreational salmon fishing in parts of Nova Scotia[3].

Deleterious impacts are, however, not limited to lakes and rivers. Scientists fear that acid precipitation will disrupt soil productivity and fertility. Acids in rain could suppress the decay of organic matter and the formation of nitrogen-fixing products on the roots of legumes. Additionally, acids accelerate the leaching of valuable nutrients like calcium and magnesium, thereby reducing the mineral stores of soils. Experiments have shown that the yields of certain crops, such as radish, beet and carrot are reduced after exposure to acid rain[4]. These studies also revealed that some crops are stimulated by acid precipitation but these results appear to be exceptions to the general rule.

The magnitude of forest productivity changes due to acid precipitation are less clear. However, the Bilateral Consultation Group expressed considerable concern for eastern Canadian forests. "Much existing indirect data suggest acid loading will sooner or later lead to a reduction in productivity that would be very costly in socioeconomic terms and not feasible to remedy."[5]

Acid precipitation damage to building and statues in Europe is well known. The acid acts on stone and marble by transforming calcite into gypsum which is washed away, thereby slowly but continuously dissolving the structure. This problem is evident in Ottawa, where the Parliament Buildings are today suffering such acid precipitation damage[6]. Acid precipitation also promotes corrosion of metals in automobiles[7].

Even hazards to human health have been implied from findings that toxic metal ions are mobilized in acidified drinking water[8].

Although it will take some time to substantiate fully terrestrial and health problems, it is virtually impossible to doubt the broad-scale harmful effects of acid precipitation and the great economic costs of them. A National Research Council of Canada study estimated that reduced forest productivity losses from wet and dry sulphur fallout amounted to $1.2 to $2.8 million in 1977[9]. The same study concluded that there is annually $285 million damage to buildings[10]. An Ontario government study revealed that some 600 Ontario fishing lodges could go under within 20 years, ending 6,000 jobs and $28 million annual income[11].

The Western Canada Situation

The severe and widespread effects of acid precipitation in eastern Canada have not yet occurred to the same extent in the west. However, there is evidence that acid rain is falling in Saskatchewan, if not throughout the western provinces. Data from the Canadian Network for Sampling Precipitation (CANSAP) shows that rain and snowfall of pH 4.6 to pH 6.3 was recorded at

Cree Lake, Saskatchewan, for the period mid 1977 to mid 1979[12]. The pH was in excess of 5.6 for only three months. No major sources of sulphur emissions occur for hundreds of kilometres from Cree Lake, and so it would appear that long range transport of pollutants from Alberta is the cause of this Saskatchewan acid rain.

The major sources of sulphur dioxide emissions are the oil and gas industries. In 1978, they accounted for almost 90 per cent of sulphur emissions in Alberta and Saskatchewan amounting to 675 tonnes per day[13]. Extraction gas plants comprised more than one-half of the total but coal burning at new synthetic crude oil plants at Fort McMurray and Cold Lake -Lloydminister is expected to give higher emissions over the next two decades[14]. The single largest point source of sulphur dioxide in western Canada is the ore processing plant at Flin Flon, Manitoba, located on the Precambrian Shield near the provincial border with Saskatchewan[15].

The disastrous effects of acid precipitation on poorly buffered lakes of the Precambrian Shield are well known. The location of current and future sulphur dioxide sources, to the west of the Shield in the Northwest Territories, Manitoba, northern Saskatchewan and northeastern Alberta means that prevailing winds will bring acid rain to sensitive western lakes and associated wildlife. Dr. U.T. Hammer, of the University of Saskatchewan, has concluded that the technology for emission controls must be improved to prevent the loss of fish from northern lakes and hence the loss of recreational, commercial and native domestic fisheries[16]. Harmful effects to lakes south of the Shield would take longer to show but it should be remembered that the Ministry of Environment in Ontario found that shock loading from acidified snow melt is sufficient to eliminate a year's hatch of fish, even in well buffered lakes[17].

In general, prairie agricultural soils are well buffered but scientific research has shown that Alberta agricultural crops and soils are susceptible to acidification. Experiments have determined that acidity is a significant factor in affecting the productivity of cereal and range crops. These studies indicated that a decrease of 1 pH unit in many Alberta soils would result in reduced yields of alfalfa and barley[18]. The cumulative effect of sulphur deposition could, therefore, have a long-term detrimental impact on prairie soils. Such findings have raised concerns among some Alberta farmers who recently protested the planned construction of a natural gas processing plant near Camrose[19].

Researchers have raised the question of increased occurrences of selenium deficiency diseases due to increased sulphur in cattle feed. Competition between sulphur and selenium suppresses the uptake of selenium by vegetation and, in acidified soils, selenium may become unavailable to cattle resulting in degenerative white muscle disease. Many farmers and veterinarians believe that there may be a correlation between gas plant emissions and increased evidence of the disease[20]. Although this supposition has not been proven, increased sulphur emissions will accentuate any existing selenium deficiencies, such as now occur in soils in northern Saskatchewan and west of Calgary and Edmonton, and could lead to harmful effects to cattle and big game.

Other potential problems which require further investigation are the sensitivity of forests in northern Saskatchewan and the ability of lichens to accumulate sulphur and affect grazing Caribou[21].

The ingredients for future acid precipitation damage are, therefore, present in western Canada - major sources of sulphur dioxide, sensitive aquatic ecosystems in the Precambrian Shield and susceptible prairie soils. We are calling on the federal government to support the western provincial governments with research about the impacts of acid precipitation and about pollution control technology needed by industry and public utilities. We urge the provincial governments to bring forward control orders to reduce emissions from tar sands developments, smelters and gas processing plants.

Citizen and Government Response

For the Canadian Nature Federation and many other environmental conservation groups in Canada the control of acid precipitation is a top priority.

In 1979, we co-organized and co-sponsored with government the Action Seminar on Acid Precipitation which brought together environmentalists, scientists, politicians, concerned citizens and industrialists to consider the causes of acid precipitation and action for effective solutions. A series of resolutions alerted governments on both sides of the Canada-United States border that a concerned public wanted sulphur dioxide emissions from all sources reduced by at least 50 per cent within ten years.

The Ontario government responded with a control order to INCO Ltd. (North America's largest point-source sulphur dioxide emitter) to reduce sulphur emissions from 3600 to 2500 tons per day, through production cut-backs[22]. We appeared at public meetings in Sudbury to ask for the immediate installation of pollution abatement equipment. Under the provincial order, such equipment is not required until second stage reductions take effect in 1983. Using published reports of available technology, we argued that lower emissions are attainable now[23]. As important, once pollution abatement equipment is in place, it would remove any possibility of increased emissions should the company press the provincial government to relax production cuts when demands for nickel rise.

The recent announcement by Ontario Hydro that scrubbers will be installed at one of its seven coal-fired power plants by 1987[24] is also an inadequate response to the problems of acid precipitation. We contend that the public of Ontario would be willing to pay, if necessary, for clean electrical power generation which could be achieved with scrubbers on the province's four largest coal-fired plants. A commitment to the installation of best available pollution control technology on all new coal-fired power plants should also have been given in light of the damage which could occur to the international Quetico-Superior wilderness area from the Atikokan generating station currently under construction[25].

Ontario is not the only province which should take action against major polluters. In Nova Scotia, up to 30 per cent of emissions from the Lingang Power plant in Cape Breton are expected to affect the local area with the remainder falling east in Newfoundland. These power plants have no scrubbers and are burning coal with a sulphur content as high as five per cent[26].

Controls are needed now on operating and proposed coal-fired electrical generating stations because of the federal government's coal conversion incentives. The recent federal budget provides a $175 million fund to

Atlantic provinces to finance up to 75 per cent of the cost of converting oil-fired plants to coal[27]. Unless coal conversion is accompanied by strict emission controls, emissions will increase.

We commend the federal government for its recent amendment of Canada's Clean Air Act. The federal government can now regulate emissions when national health is endangered, when an international agreement is violated, and when emissions arising in Canada pose a health hazard to persons in another country. There is, I believe, another potentially important power given under the Clean Air Act. The federal government may regulate the composition of fuels which are produced in or imported into Canada. So far, only the amount of lead in gasoline has been regulated but this provision could also be used to set acceptable nitrogen levels in gasoline or sulphur in coal.

The International Problem

Controlling emissions in Canada would undoubtedly reduce the problems of acid rain and would visibly demonstrate to the United States our strong desire for action. Canadian efforts, however, must be matched by similar efforts in the U.S. before substantial reversal of current environmental deterioration will occur.

Although the U.S. Environmental Protection Agency adopted strict emission standards for new coal-fired plants, most of the pollution will continue to come from old, largely uncontrolled plants. According to Gus Speth, outgoing chairman of the President's Council on Environmental Quality, even in 1995 these old plants will account for 73 per cent of sulphur dioxide emissions[28].

An increase in the amount of acid precipitation falling in Canada is expected from the U.S. government commitment to coal-fired power generation. In an effort to attain energy self-sufficiency, President Carter called for a doubling of the amount of coal burned by 1985. A program to convert some 60 utilities to coal-fired power generation from oil and gas does not necessarily include the installation of best available pollution control technology[29].

Many Canadians believe that environmental problems will be exacerbated under the new U.S. administration. Government officials and citizens, on both sides of the border, say that the U.S. Congress will be pressured to weaken, rather than strengthen, the U.S. Clean Air Act when it is reviewed later this year.

Canadian government and non-government agencies alike must intervene actively in any review of the U.S. Clean Air Act. For our part, the Canadian Nature Federation and other public interest organizations have pooled resources as the Canadian Coalition on Acid Rain and are seeking substantial funding to lobby on a full-time basis in Washington.

We want an immediate meeting between Prime Minister Trudeau and President Reagan to resolve Canadian concerns about U.S.-generated acid rain. The two countries are both affected and must work together to solve the problem. I believe that the members of this Sub-committee should be pressing on their American colleagues the great need to halt acid rain pollution for the sake of both countries. After all, the acid precipitation which affects us, also affects the United States, particularly the northeast, where lakes in the Adirondacks and salmon rivers on the coast are hard hit.

To increase the awareness of U.S. visitors, the federal and provincial governments should co-operate on education blitzes involving television and radio programming, billboards and leaflets distributed at airports, border crossings, parks and elsewhere.

Canadian environmental conservation organizations will be exploring all possibilities and setting national and international strategies when we meet with American groups in March in Washington.

I believe that we can reach an agreement with the United States to combat acid precipitation. President Reagan has expressed an interest in co-operating on certain continental problems. It must be made clear to him that the issue of acid precipitation control is tremendously important to Canada and that joint action on pollution abatement must be forthcoming if co-operation in other areas is expected.

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JUNIOR NATURALISTS' SECTION

ANIMAL ESSAY

by Erin Sanderson
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Canmore, Alberta TOL OMO

Hi, I am Bucky Beaver reporting to K.B.N. Edmonton News. I am Canada's national mammal and I have been picked to report this Provincial Beauty Contest, because I know what it is like to be an honourary symbol.

The judges have given me a set of rules as follows: each contestant will be allowed to talk a bit about itself and give one reason why we should have a provincial mammal of Alberta. The winning contestant will be chosen for its charming looks, strong, factual points when giving its speech and great personality.

Here are the four beautiful animals nervously waiting to see who will be chosen provincial mammal: Richardson's Ground Squirrel, Elk, Weasel and Bison.

The first contestant is Miss Samantha Squirrel.

"Hi, you should pick me as provincial mammal, because when human folk are walking or driving through the prairies, they will always see my cute, little face poking out of my hole in the ground in summer, spring or fall. This is the 75th anniversary of Alberta and is a great time to choose a mammal to make people think about, and respect, our province."

The trees are swaying because of the thunderous, ear-ringing applause of the squirrel family.

The second contestant is Ernie Elk.

"Hi, I am Ernie Elk and some of my finer, physical features are my velvet-coated, 7 point antlers and my brown, silky coat. In winter, you will always see my tracks and you may see me grazing on the side of the Trans Canada Highway. Unfortunately, you may also see me cut and bleeding from a careless person who does not watch for wildlife while driving. Pick me as provincial mammal and maybe save a lot of unnecessary deaths on the highway by making people think about Alberta's wildlife." The ground is rumbling because the Elks are clicking their antlers together and stamping their hooves in excitement and pride.

Now, Miss Wanda Weasel is ready to speak and she does look lovely... What's this? She's changing her thick, white, winter coat with her pitch, black tipped tail and here she is in her summer coat of glistening brown.

"My, you are a lovely audience. Pick me as Alberta's provincial mammal because I blend with the changing scenery. When the snow falls or spring days appear I change my colour to camouflage myself. The Beaver is doing such a great job representing Canada (at this point Bucky is blushing) that a provincial mammal might bring tourists to see all the animals and especially the provincial mammal in beautiful Alberta.

The weasels in the audience are going wackers!!!

Last, but not least, here comes Betty Bison.

"You should pick me as the provincial mammal because I think I remind people of Alberta's history. My shaggy, coarse appearance might make Albertans think of the tall grasses and the time when all animals were allowed to roam freely."

The bison herd are nodding their shaggy heads in agreement with Betty's beautiful speech.

Well, fellow animals, is this not a hard decision? I am going to leave it up to you. This is Bucky Beaver signing off from in the heart of the forest."

BOBCAT

by Curtis Cook
Grade 7
St. Marys Beaverlodge
Box 479
Beaverlodge, Alberta TOH OCO

I have chosen to write on the Bobcat for the mammal emblem of Alberta.

The Bobcat lives in the mountains or the deserts southwest of Alberta. Bobcats favour wild and broken country.

The Bobcat looks like the Canada Lynx. The two animals look very much alike, but the Bobcat has a longer tail, shorter ears, and smaller feet. The Bobcat has long legs and stands about 15 inches high at the shoulders. Its tail is about 7 inches long. Bobcats can weigh from 15 to 30 pounds. The Bobcat has a pale tan to a dark reddish-brown coat, depending on where they live. Those in dry areas are pale coloured, and those in damp areas are darker. All have dark spots. Bobcats live in wooded areas and bushy ravines. They eat rabbits, squirrels, gophers and other small animals. They travel from two to seven miles a night in seach of prey. When food is scarce, however, they'll range up to 50 miles. Sometimes their numbers dip, possibly with a ten-year, up-and-down because of the hare cycle. Bobcats benefit man by helping to control mice, too. A good Bobcat habitat includes timberland. With America's forests currently in stable condition, the Bobcat's future looks sound.

I chose the Bobcat because there are Bobcats in Alberta and they keep the population of mice and hares down, and you can use the Bobcat's pelts. Bobcats were in Canada and in Alberta a long time ago and Bobcats help us in many ways. Therefore, we should give the Bobcat a chance to be the mammal emblem for the province of Alberta.

OVERHEARD

"On the bookshelves that line my office there are two squat, fat, red books that glower at me continuously. They are the first things that catch my eye in the morning and the last things that catch my eye as I close the office door at night. These are the Red Data Books produced by the I.U.C.N. One deals with mammals, the other with birds, and they list the mammals and birds in the world today that are faced with extinction.

I was once interviewed by a reporter from some newspaper or other, who said: "Tell me, how many species of animals are actually endangered." I went to the bookshelf, took down the two fat, red volumes, and I plonked them in his lap. "I'm note sure," I said. "I haven't had the courage to count them." He glanced down at the two volumes and then looked up at me with real horror on his face. "Good God," he said "You don't mean to say that all these are threatened."

- Gerald Durrel
Catch Me a Colobus, 1972

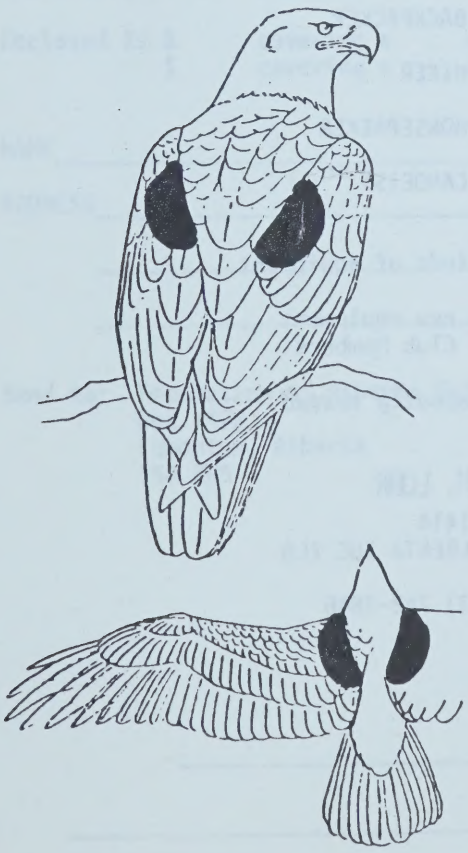
Submitted by Murray A. Tozer

INFORMATION REQUESTED ON SIGHTINGS OF WING-TAGGED BALD EAGLES

Bald Eagles are being captured and marked along McDonald Creek, Glacier National Park, northwestern Montana. This site is a temporary stop for the eagles on their way south to wintering areas.

In 1978 and 1979 a bright orange wing marker (3 by 5½ inches) was placed next to the body on each wing. In 1977, the markers were bright yellow. The accompanying sketches show the locations of the markers on the birds while perched and in flight. Orange markers are coded A11 to A99. Yellow markers are coded M01 to M10. It is important to report codes if they can be read ' because birds marked in Colorado have bright yellow markers, but are coded C01 to C99.

Sightings of marked birds will help determine migration routes, wintering areas, and nesting areas.



INFORMATION NEEDED

1. Was the eagle an adult (white head and tail) or a subadult (various combinations of dark and light body plumage)?
2. Marker number.
3. Exact location where eagle was observed.
4. Date and time of sighting.
5. Activity of bird.
6. Were other eagles nearby, and how many?
7. Observer's name, address and telephone number.

Please report sightings to:

Bald Eagle Project
Glacier National Park
c/o Riley McClelland
West Glacier, MT 59936
Phone: 406-888-5441 or 406-728-1780

and to:

Bird Banding Laboratory
U.S. Fish and Wildlife Service
Laurel, Maryland 20810

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